Westinghouse

ENGINEERING EVALUATION AND COST ANALYSIS (EE/CA) FOR DEUL'S MOUNTAIN WESTINGHOUSE FORMER FUEL CYCLE FACILITY SITE FESTUS, MO

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APPENDICES

ACRONYMS

AEC	Atomic Energy Commission
ALARA	As low as reasonably achievable
ARAR	Applicable or Relevant and Appropriate Requirements
BEIR	Committee on the Biological Effects of Ionizing Radiation
CERCLA	Comprehensive Environmental Response, Compensation, and Liability Act
CFR	U.S. Code of Federal Regulations
COC	Constituents of concern
DOE	U.S. Department of Energy
DOT	U. S. Department of Transportation
EE/CA	Engineering Evaluation and Cost Analysis
EPA	U.S. Environmental Protection Agency
FFCF	Former Fuel Cycle Facility
FSS	Final Status Survey
ICRP	International Commission on Radiological Protection
MARSSIM	Multi-Agency Radiation Survey and Site Investigation Manual
MDNR	Missouri Department of Natural Resources
NCP	National Oil and Hazardous Substances Pollution Contingency Plan
NCRP	National Council on Radiation Protection
NRC	Nuclear Regulatory Commission
OSHA	Occupational Safety and Health Administration
PPE	Personal Protective Equipment
RI	Remedial Investigation
RI/FS WP	Remedial Investigation / Feasibility Study Work Plan
TBC	To Be Considered
VCD	Volumetric Clearance for Disposal
WAC	Waste Acceptance Criteria

EXECUTIVE SUMMARY

Westinghouse Electric Company LLC (Westinghouse) has prepared this Engineering Evaluation and Cost Analysis (EE/CA) to evaluate potential removal action alternatives for "Deul's Mountain," a soil pile at the Hematite Former Fuel Cycle Facility (FFCF). This pile contains an estimated 1,100 cubic yards of uranium-impacted soils generated from previous remediation efforts at the site and from the earlier installation of a loading dock. Relocation of this pile is needed to allow for the investigation of possible burial pits located beneath the current location of the pile. Identification and characterization of these pits is an integral part of the RI/FS Work Plan being implemented at the FFCF Site. In addition, given the fact that the soil pile itself contains uranium-impacted soils, it is likely that a response action to address these impacts will be required. This EE/CA will address both of these objectives.

The FFCF Site is located in the east portion of Missouri, in Jefferson County, near the town of Hematite. It fronts the eastbound lane of Missouri State Road P, between the hills to the northwest and a terrace/floodplain of Joachim Creek to the southeast. The topography slopes gently to the southeast eventually blending with the alluvial floodplain deposits of the Joachim Creek, which runs along the southeastern edge of the Site property and flows into the Mississippi River.

An investigation of Deul's Mountain was conducted in September 2002. Westinghouse tasked US Ecology to perform a limited characterization. Based on historical information, the soils contained in Deul's mountain were expected to contain U-238, U-235, and U234. Analytical results from samples collected during the characterization confirmed the presence of U-238, U-235, and U-234. No other isotopes were detected.

The result of the EE/CA process provides a recommendation for a response action based on the evaluation of the alternatives considered. Preparation of this EE/CA fulfills the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA) requirement for documenting selection of a response action. As noted above, the goal of this EE/CA is to develop an alternative for Deul's Mountain that is protective of human health and the environment and that allows for the timely implementation of the site-wide Remedial Investigation, including the investigation of possible burial pits.

This EE/CA discusses the results of the evaluation of five Removal Action Alternatives regarding the final disposition of impacted soil in Deul's Mountain. Westinghouse developed the removal action alternatives for Deul's Mountain after evaluating applicable technologies capable of protecting human health and the environment. The evaluated alternatives are the following:

- Alternative 1: No Action with Engineering Controls;
- Alternative 2: Relocation and Storage for Evaluation during Future Site Response Activities;

- Alternative 3: Excavation and On-Site Storage of Soil;
- Alternative 4: Excavation and Off-Site Disposal of Soils; and
- Alternative 5: Excavation, Consolidation for Volumetric Clearance for Disposal

The recommended alternative is Alternative 5, which allows for the excavation and off-site disposal of impacted materials in Deul's Mountain and the complete and timely characterization of burial pits located beneath the soil pile. All five alternatives were evaluated with respect to effectiveness, implementability, cost, and other relevant factors.

1.0 INTRODUCTION

Westinghouse Electric Company (Westinghouse) has prepared this Engineering Evaluation and Cost Analysis (EE/CA) to evaluate potential response options for "Deul's Mountain" at the Former Fuel Cycle Facility (FFCF) Site. This response action is required to mitigate both a human health and environmental risk and to remove interferences with the site-wide Remedial Investigation (RI). Investigation of historical operations at the site indicates that the footprint beneath Deul's Mountain may contain burial pits.

2.0 SITE CHARACTERIZATION

Site characterization includes discussion of both the site description and background information; previous removal actions; the source, nature, and extent of contamination; summary of analytical data; the site conditions justifying a removal action; and a streamlined risk evaluation.

2.1 Site Description and Background

The FFCF Site is located in the eastern portion of Missouri in Jefferson County near the town of Hematite. It fronts the eastbound lane of Missouri State Road P, between the hills to the northwest and a terrace/floodplain of Joachim Creek to the southeast. The topography slopes gently to the southeast eventually blending with the alluvial floodplain deposits of the Joachim Creek, which runs along the southeastern edge of the Site property and flows into the Mississippi River.

Within four miles of the Site more than 11,000 people are served by public wells in the area, and nearly 1,000 are served by private wells. The surrounding area is mainly suburban residential.

The FFCF Site is privately owned by Westinghouse and was acquired from ABB in April of 2000. The FFCF Site has been commercially owned and operated since manufacturing operations began in 1956. The U.S. Department of Energy (DOE) and its predecessors were the primary customers of the FFCF Site between 1956 and 1974. There are currently no manufacturing operations being performed at the FFCF Site.

Primary functions at the FFCF Site throughout its history have included the manufacture of uranium compounds from natural and enriched uranium for use as nuclear fuel. Specifically, operations included the conversion of uranium hexafluoride gas of various ^{235}U enrichments to uranium oxide, uranium carbide and uranium metal. These products were manufactured for use by the Federal government and government contractors and by commercial and research reactors approved by the Atomic Energy Commission (AEC). Research and development was also conducted at the FFCF Site, as were uranium scrap recovery processes.

2.2 Previous Removal Actions

A number of previous investigations and removal actions have been conducted at the FFCF Site relating to both on-site and off-site impacts. Specifically, in 2002, Westinghouse, in conjunction with the Missouri Department of Natural Resources (MDNR), determined that a time-critical removal action was appropriate to mitigate potential risks associated with groundwater impacts in the vicinity of the FFCF Site. Westinghouse prepared an Action Memorandum to document its response (bottled water, filtration units, as needed and additional investigation) to address the potential risk. This Action Memorandum was subsequently approved by MDNR and implemented. As a follow up to this response action, Westinghouse submitted an EE/CA to MDNR in January 2003. The evaluation of groundwater conditions and potential alternatives to address these conditions was conducted as a non-time critical removal action in accordance with the Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 *et seq*., the National Contingency Plan (NCP), 40 C.F.R. § 300.1 *et seq*., and resulted in an extension of the existing water supply to residents in the vicinity of the FFCF Site. These removal action documents are available in the information repository established for the FFCF Site.

With respect to Deul's Mountain, routine sampling has been conducted; however no subsurface soil sampling has been performed below three (3) feet. Soil samples were taken to a depth of three (3) feet from the top of Deul's Mountain to characterize the soil. Westinghouse's sampling results of Deul's Mountain are provided in Appendix A. In addition, a contractor was hired to perform sampling of Deul's Mountain and these results are found in Appendix B with a corresponding map in Appendix C.

2.3 Source, Nature, and Extent of Contamination

Deul's Mountain consists of approximately 1,100 cubic yards of soil located within the current facility security fencing. The soil pile is believed to have originated from the construction of a truck bay associated with Building 256, on the far north side of the FFCF Site, by a previous owner/operator of the facility. Although the shape is not uniform, the footprint is approximately 90 feet by 68 feet in plan, with an average height of 7.5 feet. Seasonally, the pile supports heavy vegetation, which consists primarily of brush and poison oak.

Current characterization data indicates U-235 enrichment between 2.5% and 12%. The pile appears to be primarily native soil, but also includes some debris. During the characterization, it was determined that there is a significant quantity of debris, concrete, and asphalt approximately three (3) feet below the top surface which hindered characterization efforts below the three (3) foot depth.

Based on information gathered for the preparation of the Remedial Investigation and Feasibility Study Work Plan (RI/FS WP), it is possible that Deul's Mountain is atop an

area that was used for subsurface burial of waste in the past. These burial pits have been identified as an area of concern and will be studied in detail as part of the RI/FS for the FFCF Site.

2.4 Analytical Data

An investigation of Deul's Mountain was conducted in September 2002. US Ecology was tasked to perform a limited characterization of the soil pile. Based on historical information, Deul's Mountain was expected to contain U-238, U-235, and U-234.

Analytical data resulting from routine Westinghouse surveys and the characterization performed by US Ecology are provided in Appendix A. Two discrete techniques, gamma spectroscopy and alpha spectroscopy, generated radiological results. Analytical results from samples collected during the characterization confirmed the presence of U-238, U-235, and U-234. No other isotopes were detected.

2.5 Site Conditions Justifying a Removal Action

Section 300.415(b)(2) of the NCP provides several criteria for evaluating the need for and selection of removal actions under the CERCLA. If conditions satisfy the conditions of one or more of these criteria, the NCP suggests that it is appropriate to consider conducting a removal action.

A removal action at Deul's Mountain is justified given that the conditions at Deul's Mountain, as addressed in this EE/CA, satisfy several of the criteria set forth in the NCP, including the following:

- Impacted soils at Deul's Mountain could present an actual or potential exposure to nearby human populations, animals, or food chain from hazardous substances or pollutants or contaminants

- Impacted soils at Deul's Mountain could present an actual or potential contamination of drinking water supplies or sensitive ecosystems

- The presence of the impacted soils may interfere with conducting a complete and timely RI, thereby posing a long-term threat to human health and the environment

- The excavation and ultimate removal of the soil pile will mitigate potential human health and environmental risks posed by the constituents of concern (COC) present within the soils by reducing the spread of, or direct contact with, COCs present in the soil pile

- The removal of the soil pile in a timely manner will allow for timely implementation of the long-term remedial action for the FFCF Site as set forth in the approved RI/FS WP for the FFCF Site.

2.6 Streamlined Risk Evaluation

The streamlined risk evaluation discussion is presented in three sections: human health risks, ecological risks, and proposed cleanup levels.

2.6.1 Human Health Risks

There is a potential human health risk via direct contact with the radiological constituents present in the soil in Deul's Mountain. Deul's Mountain is located in the general work area of the FFCF Site that is accessed by Westinghouse employees, contractors, subcontractors, security personnel and visitors on routine basis. This soil pile is adjacent to railroad and natural gas pipeline rights-of-way that Westinghouse does not control access. Because this soil pile currently is located within a fenced in area, the potential for such exposure to the public at this time is minimized.

Although the pile is not covered and is exposed to weather, sampling results indicate that radiological contamination is not currently migrating laterally from Deul's Mountain. Westinghouse has monitored for migration in the soil and local groundwater and has determined that there currently is no significant radiological impact.

However, the current position of the pile hinders complete characterization of the burial pits located beneath the soil pile. The existence of these burial pits at the FFCF Site represents a potential human health risk if further characterization is not completed, and in order to perform such characterization in an orderly, complete and effective manner, the soil pile must be removed. Currently there is no practical or feasible approach that would allow identification and characterization of pits with the soil pile in place. The configuration of the pile, does not allow drilling, direct push or manual sampling to any needed depth.

Ecological Risks

Because of its location within the security fence in the general work area of the FFCF Site, potential ecological risks posed by the soil pile are currently minimized. However, materials underlying the soils have not been fully characterized and therefore potential adverse effects to ecological receptors exist. The full effect on ecological receptors, if any, will not be known until the FFCF Site is fully characterized in accordance with the approved RI/FS WP.

2.6.2 Proposed Cleanup Levels

The removal action addresses all above-grade soil that was previously excavated and stockpiled in Deul's Mountain. The basic concept for managing exposures to ionizing radiation and releases of radioactive materials to reduce collective doses as far below

regulatory limits as is reasonably achievable is the driver for the proposed cleanup levels. Reducing the exposure on-site to ALARA includes performing cleanup to limits that are as low as possible through additional planning and management, remediation and the use of additional resources to achieve a collective dose level.

3.0 IDENTIFICATION OF REMOVAL ACTION OBJECTIVES

Removal action objectives are media-specific goals that are established to protect human health and the environment. The specific components of the objectives are defined in Sections 3.1 through 3.5.

Selection of a course of action is accomplished by a series of steps designed to reduce potential alternatives to a group of viable alternatives from which a final alternative may be selected. The development of alternatives includes consideration of the constituents of interest, associated media, potential exposure pathways, and potential receptors. The objectives of the removal action for Deul's Mountain are as follows:

- Eliminate Deul's Mountain as a potential hazard to human health and the environment;
- Minimize potential health hazards to on-site personnel performing the removal action; and
- Remove the interference, Deul's Mountain, to facilitate the site-wide RI.

3.1 Statutory Limits

Authority for responding to releases or threats of releases from an impacted site is addressed in Section 104(a) of CERCLA, 42 U.S.C. § 9604(a). CERCLA, Section 104 and Section 300.415 of the NCP, 40 C.F.R. § 300.415, specifically address non time-critical removal actions. It should be noted that statutory limits under CERCLA and the NCP regarding duration and funding apply only to removal actions paid for with Superfund monies and are not applicable to responses undertaken by private parties.

3.2 Scope and Purpose

The primary purpose of the removal action is to mitigate potential human health and environmental risks posed by the COCs present within the soils in Deul's Mountain. The complementary objective is to facilitate implementation of the RI/FS WP by allowing for adequate characterization of the burial pits located beneath the soil pile.

3.3 Removal Action Schedule

The schedule for removal activities will be determined by Westinghouse with input from the MDNR and U.S. Nuclear Regulatory Commission (NRC). The removal action

schedule will be designed within a time frame that ensures adequate protection of public health and the environment and supports the RI activities under the approved RI/FS WP.

3.4 Planned Remedial Activities

Westinghouse is currently evaluating the FFCF Site pursuant to the procedures and schedules established in the Remedial Investigation/Feasibility Study Work Plan and the Hematite Decommissioning Plan, and future remedial steps for the Site will be implemented through the process identified in those plans. The removal action selected within the scope of this EE/CA will, to the extent practicable under the circumstances, be consistent with any future remedial steps taken at the FFCF Site.

3.5 Applicable or Relevant and Appropriate Requirements

Applicable or Relevant and Appropriate Requirements (ARARs) are Federal and state human health and environmental requirements used to define the appropriate extent of site cleanup, identify sensitive land areas or land uses, develop remedial alternatives, and direct site remediation. CERCLA and the NCP require that remedial actions comply with State ARARs that are more stringent than Federal ARARs, are legally enforceable, and are consistently enforced state-wide. Although not directly applicable to removal actions under CERCLA, the NCP indicates that such actions should attain ARARs to the extent practicable under the circumstances.

The NCP defines two ARAR components: applicable requirements and relevant and appropriate requirements. Applicable requirements are cleanup standards, standards of control, and other substantive requirements, criteria, or limitations promulgated under Federal or state environmental or facility siting laws that specifically address a hazardous substance, pollutant, contaminant, remedial action, or other circumstance found at a CERCLA site. State standards that may be applicable are only those which have been identified by the State in a timely manner, are consistently enforced, and are more stringent than Federal requirements.

Relevant and appropriate requirements are those cleanup standards, standards of control, and other substantive requirements under Federal and state environmental and facility siting laws that, while not "applicable" to a hazardous substance, pollutant, contaminant, or remedial action, address situations sufficiently similar to those encountered at the CERCLA site so that their use is well suited to the particular site. Only those state standards that are identified in a timely manner and are more stringent than Federal requirements may be relevant and appropriate.

Other requirements to be considered (TBC) are Federal and state non-promulgated advisories or guidance that are not legally binding and do not have the status of potential ARARs (i.e., they have not been promulgated in statute or regulations). However, if there are no specific ARARs for a chemical or site condition, or if ARARs are deemed

insufficiently protective, then guidance or advisory criteria should be identified and used to ensure the protection of human health and the environment.

Under the description of ARARs set forth in the U. S. Environmental Protection Agency (EPA) guidance documents, State and Federal ARARs are categorized as follows:

- Chemical-specific - governing the extent of site remediation with regard to specific contaminants and pollutants.

- Location-specific - governing site features such as wetland, floodplains, and sensitive ecosystems and pertaining to existing natural and manmade site features such as historical or archaeological sites.

- Action-specific - pertaining to the proposed site remedies and governing the implementation of the selected site remedy.

As described in the *"CERCLA Compliance with other Laws Manual"* (EPA/520/G-89/009), several agencies potentially have authority over the cleanup of sites impacted with radioactive materials, including the DOE, NRC, EPA and state agencies. The standards and guidance of the various groups are designed to be consistent with one another and they often overlap in scope and purpose and incorporate the same basic provisions. The regulatory agencies rely on reports and models developed by health physics organizations including the International Commission on Radiological Protection (ICRP), the National Council on Radiation Protection (NCRP), and the committee on the Biological Effects of Ionizing Radiation (BEIR) when radiological contaminants are present. In general, public health standards and guidelines are developed to protect individuals, future generations, and populations from unnecessary exposure to radiation. The basic concept is that all radiation may be harmful to human tissue and therefore exposure must be reduced to As Low As Reasonably Achievable (ALARA).

Chemical-specific ARARs and TBCs for Deul's Mountain are summarized in Table 3-1, and action-specific ARARs and TBCs are summarized in Table 3-2. There are no location-specific ARARs or TBCs associated with the proposed removal action. During the analysis of removal action alternatives in Section 5.0, each alternative will be analyzed to determine its compliance with ARARs.

Table 3-1
Potential Chemical-Specific ARARs/TBCs

Standard, Requirement, Criteria, or Limitation	Citation	Description of Requirements	Status	Comment
NRC Radiological Criteria for License Termination	10 CFR 20 Subpart E, specifically 10 CFR §20.1402	This rule provides consistent standards to NRC licensees for determining the extent to which lands must be remediated before decommissioning and demolition (D&D) can be considered complete and the license terminated. For unrestricted use, the standard is 25 millirem per year (mrem/year) and ALARA.	Applicable	These standards apply
Guidelines for Decontamination of Facilities and Equipment Prior to Release for Unrestricted Use or Termination of Licenses for Byproduct, Source or Special Nuclear Material	FC-83-23	This guideline provides consistent standards to NRC licensees for decontamination and survey of surfaces or premises and equipment prior to release for unrestricted use.	Applicable	This Guide applies to work at the Hematite Site and is a license requirement
Criteria for Release of Equipment and Materials	Regulatory Guide 1.86	This NRC guidance sets default surface radioactivity guidelines for release of equipment and non-environmental materials (e.g., walls, floors, etc.).	TBC	This Guide is a TBC for equipment used during remediation.

Table 3-2
Potential Action-Specific ARARs

Standard, Requirement, Criteria, or Limitation	Citation	Description of Requirements	Status	Comment
General construction standards – site preparation, demolition, and any land-disturbing activities				
OSHA - General Industry Standards	29 CFR 1910	Specifies the 8-hour time-weighted average concentration for various organic compounds. Training requirements for workers at hazardous waste operations are specified in 20 CFR 1910.120.	Relevant and Appropriate	The Site Specific Health and Safety Plan (HASP) will contain applicable information.
Health and Safety Requirements for Construction Activities	29 CFR Part 1926	Establishes construction standards	Applicable	Applicable to all alternatives for the protection of decommissioning/ Remediation Workers
Control of Fugitive Dust	CSR Title 10	When conducting remedial activities, reasonable precautions have to be taken to prevent particulate matter from becoming airborne. No visible particulate may be emitted beyond the boundary of the right of entry or so as to cause a nuisance.	Relevant and Appropriate	This rule is considered relevant and appropriate to the extent necessary to ensure control of fugitive Dust Emissions.
Clean Air Act – National Emission Standards for Radionuclide Emissions From Facilities Licensed by the NRC and Federal Facilities Not Covered by Subpart H	20 CFR 61 Subpart I	Emission levels shall not exceed an effective dose equivalent of 10 mrem/year	Relevant and Appropriate	Emissions levels are limited via the Hematite Materials License to 5x10 (-12) uCi./ml alpha, not to exceed 150 uCi/qtr
General transportation or worker protection standards				
Hazardous Materials Transportation Regulations	29 CFR 173 Subpart I (1992)	The U.S. Department of Transportation (DOT) definition of "radioactive material" set forth in this Subpart is any material having a specific activity greater than 0.002 milliCuries per gram (mCi/g), or 2,000 picocuries per gram (pCi/g). This minimum specific activity number includes all U, Ra, and Th daughter products. Radionuclides that surpass minimum A, quantity (and allowable specific activity) requirements are DOT-regulated low specific activity materials.	Applicable	Applicable to radioactive materials.
Hazardous Materials	29 CFR 171 –	Part 171 establishes basic definitions and provisions for	Applicable	Specific Subparts or

Standard, Requirement, Criteria, or Limitation	Citation	Description of Requirements	Status	Comment
Transportation Regulations	179	transporting any hazardous materials, as listed on the HMTA Table in Part 172. Part 172 also contains marking, labeling, placarding, and training requirements. Part 173 contains general requirements for shipments and packaging. Part 172 governs carriage by rail and Part 177 governs carriage by public highway.		Sections of these regulations set out radioactive waste transportation requirements.
OSHA - Record keeping, Reporting, and Related Regulations	29 CFR 1902	Outlines the record keeping and reporting requirements for an employer under the Occupational Safety and Health Administration (OSHA).	Relevant and Appropriate	These requirements apply to all site contractors and subcontractors and must be followed during all site work under 20 CFR 300.150.
Notices, Instructions and Reports to Workers: Inspection and Investigations	10 CFR 19	The regulation apply to all persons who receive, possess, use, or transfer material licensed by the NRC.	Applicable	These requirements apply to all site contractors and subcontractors and must be followed during all site work
Domestic Licensing of Special Nuclear material	10 CFR 70	The regulation establishes procedures and criteria for the issuance of licenses to receive title to, own, acquire, deliver, receive, possess, use, and transfer special nuclear material.	Applicable	Sets out radioactive waste transportation requirements.
Packaging and Transportation of Radioactive Material	10 CFR 71	The regulation establishes requirements for packaging, preparation for shipment, and transportation of licensed material.	Applicable	Sets out radioactive waste transportation requirements.
Physical Protection of Plants and Material	10 CFR 73	Prescribes requirements for the establishment and maintenance of a physical protection system which will have capabilities for the protection of special nuclear material at fixed sites and in transit	Applicable	Sets out radioactive waste transportation requirements, which are incorporated in the Project Transportation Plan.
NRC (Standards for Protection Against Radiation), Transfer for Disposal and Manifests	10 CFR 20.2006	Provides that transfer of radioactive waste intended for land disposal is accompanied by a manifest and be conducted in accordance with specified regulations.	Applicable	Applicable only to commercial disposal.

4.0 IDENTIFICATION OF REMOVAL ACTION ALTERNATIVES

Removal action alternatives should accomplish the identified removal action objectives. Alternatives that meet these objectives will be further evaluated according to the criteria of effectiveness, implementability, and cost. For the purposes of this EE/CA, several removal action alternatives were considered as discussed below.

Initially, an entombment on-site alternative was considered. This alternative would allow for the removal of soil from the present location and subsequent storage in a secure, engineered containment cell on-site. However, through the initial steps of the screening process, it became clear that the selection of this alternative would be inconsistent with the Remedial Action Objectives set forth in this EE/CA and with site-wide objectives insofar as: (1) the engineering and design costs alone for this alternative could outstrip the ultimate costs of off-site disposal; (2) significant administrative hurdles (i.e., lengthy government approvals (if even attainable), public opposition, etc.) would need to be overcome; (3) significant post-remedial monitoring and other long-term care requirements would be triggered; and (4) the overall site objective of unrestricted future use would not be met. As a result, this entombment alternative was screened out, and will not be considered further in this EE/CA. The remaining five alternatives are presented in detail below.

4.1 Alternative 1: No Action with Engineering Controls

A "no-action" alternative would allow Deul's Mountain to remain in place. Engineering controls (e.g., restrictive fencing and warning signs) would be included in this Alternative. As discussed below, the "no-action" alternative does not achieve the primary objectives of the removal action insofar as the impacted soils would continue to present a threat to human health and the environment and it does not reduce doses to as far below the regulatory limits as possible. In addition, because Deul's Mountain would remain in place, it would continue to interfere with the identification and characterization of burial pits in the area. This alternative is carried through the analysis for comparative purposes.

4.2 Alternative 2: Relocation and Open Storage On-Site

A relocation and storage for future use alternative allows for the removal of soil from the present location and the storage of the soils in a non-containerized fashion. Under Alternative 2, the removal action would remove impacted soil from the immediate area suspected of containing additional burial pits and would allow for adequate characterization of such burial pits. However, by relocating the soil, the risk exists for homogenization of soil and an increased contaminated soil volume requiring ultimate disposal. In addition, Alternative 2 may not address the potential risks posed by the presence of the impacted soils at the FFCF Site in the longer-term.

4.3 Alternative 3: Relocation and Containerized Storage On-Site

An excavation and on-site storage alternative allows for the removal of soil from the present location and subsequent storage in locked inter-modal containers or other suitable containers on site. Under Alternative 3, the removal action would remove impacted soil from accessible areas sufficient to adequately perform the RI and would allow for adequate characterization of burial pits beneath the soil pile. Impacted soil would be containerized and stored on-site. Post-remedial activities include a site-specific plan to monitor the inter-modal containers for eventual degradation or other breach for release of radioactivity. However, by relocating the soil, the risk exists for homogenization of soil and an increased contaminated soil volume requiring ultimate disposal. In addition, Alternative 3 may not address the potential risks posed by the presence of the impacted soils at the FFCF Site in the longer-term.

4.4 Alternative 4: Excavation and Off-Site Disposal of Soil

An excavation and off-site disposal alternative allows for the removal of soil from the present location and subsequent transport to an off-site, permitted disposal facility (e.g., Envirocare of Utah). Alternative 4 accomplishes the primary removal objective by relocating impacted soil from accessible areas, reducing doses to ALARA and also facilitates implementation of the RI/FS WP by allowing for adequate characterization of the burial pits located beneath the soil pile.

4.5 Alternative 5: Excavation, Consolidation for Volumetric Clearance for Disposal.

An excavation and consolidation for Volumetric Clearance for Disposal (VCD) allows for the removal of soils from the present location, consolidation with additional waste, and subsequent transport to an off-site, licensed disposal facility. VCD is the process of monitoring volumetrically contaminated materials of low activity to certify them as non-radioactive for release to an out-of-state industrial landfill. This process results in significant cost savings over Alternative 4 which disposes the material as low-level radioactive waste regardless of its volumetric activity. Alternative 5 accomplishes the removal objective of relocating impacted soils from inaccessible areas, reduces doses to ALARA and also facilitates implementation of the RI/FS WP by allowing for adequate characterization of the burial pits located beneath the soil pile.

5.0 ANALYSIS OF REMOVAL ACTION ALTERNATIVES

The primary purpose of the removal action is to mitigate potential human health and environmental risks posed by the COCs present to ALARA within the soils in Deul's Mountain. The complementary objective is to facilitate implementation of the RI/FS WP by allowing for adequate characterization of the burial pits located beneath the soil pile.

The removal alternatives were evaluated using EPA's *"Guidance on Conducting Non-Time-Critical Removal Actions under CERCLA"* (August 1993) (the EE/CA Guidance).

This section evaluates the five removal alternatives identified in Section 4.0 based on their effectiveness, implementability, and cost in relation to site-specific conditions, consistent with the NCP and the EE/CA Guidance. The removal alternatives are evaluated to ensure that they effectively protect human health and the environment and satisfy the defined removal action objectives.

5.1 Effectiveness

The effectiveness of an alternative refers to its ability to meet the objective within the scope of the removal action. The effectiveness and reliability of the removal alternatives are evaluated with respect to the COCs and conditions at the site. Consideration is given to the protection each alternative affords to public health (Section 5.1.1); site workers (Section 5.1.1.2); the environment (Section 5.1.1.3, including compliance with applicable ARARs) and the useful life of the processes within a removal alternative (i.e., the length of time that it performs its intended function).

5.1.1 Overall Protection of Human Health and the Environment

5.1.1.1 Protective of Public Health and Community

This criterion addresses whether an alternative provides adequate protection of public health and the environment and describes how risks are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Under Alternative 1, the risk of potential human exposure from contaminants at the site is not reduced to ALARA or eliminated. Although engineering and institutional controls would act to limit potential exposure to the COCs in the materials in Deul's Mountain, such controls would not facilitate the characterization of the ground beneath Deul's Mountain. Accordingly, Alternative 1 will not facilitate the identification and potentially the elimination of a source for potential human exposure from contaminants other than the currently known radiological contaminants in Deul's Mountain. Site-specific contamination would remain uncontrolled and, therefore, have the potential to spread to surrounding soils and water pathways allowing for potential human exposure.

Under Alternative 2, the risk of potential human exposure from contaminants at the site is reduced but not eliminated. Relocation of Deul's Mountain to a new location allows for the investigation of burial pits beneath the soil pile. Exposure to site workers during the handling of impacted materials would have to be monitored and proper personnel protective measures put in place. Even with intensive environmental and personnel monitoring, relocating the soil introduces some short-term risks associated with worker exposure and the potential for increased airborne dust releases. Under Alternative 2, these short-term impacts are not offset by any long-term decrease in human health or

environmental risk. The long-term risk to human health presented by the soil remains identical to Alternative 1.

Under Alternative 3, relocating Deul's Mountain to a new location allows for the investigation of burial pits beneath the soil pile. Impacted soil and waste materials would be removed from their present location, packaged in containers according to current industry standards, moved and stored in a secure on-site location. Exposure to site workers during the handling and repackaging of impacted materials would have to be monitored and proper personnel protective measures put in place. Because of additional handling and sorting to fill containers, the short-term risks for Alternative 3 may be slightly greater than those of Alternative 2. The higher short-term risks would be somewhat offset by the reduced longer-term risk due to the containerization of the impacted materials. Exposure to site workers near the storage containers would have to be monitored and the containers themselves would have to be monitored and inspected on a periodic basis for evidence of failure. Eventually, however, such materials would need to be placed in a permanent disposal facility or location.

Under Alternative 4, relocating Deul's Mountain to a new location and disposal off-site at an approved facility allows for the investigation of possible burial pits. Potential short-term risks would be similar to Alternative 3 with the addition of risks associated with the long-distance transport of these materials to the disposal facility. Public exposure would be minimized during transport by inspecting the vehicles before and after use, decontamination of exterior waste packages when needed, using only covered waste packages, observing safety protocols, and by following pre-designated routes. Transportation risks increase with distance and volume, although the potential for any spillage and resultant public exposure would be very low. The transport of wastes to an off-site disposal facility would comply with DOT regulations and directives as well as other applicable Federal regulations.

Potential risks associated with Alternative 5 would be similar to those described under Alternative 4. The exception would be the shorter distance required to transport the materials for disposal to Tennessee instead of Utah.

5.1.1.2 Protective of Workers during Implementation

This criterion addresses whether an alternative provides adequate protection of site workers, and describes how potential occupational doses and injuries are eliminated, reduced, or controlled through treatment, engineering controls, or institutional controls.

Under Alternative 1, no removal action would be taken; however, necessary maintenance and surveillance activities would require workers to work in proximity to Deul's Mountain on a routine basis. Appropriate personnel protection equipment (PPE) would be required and proper radiological controls and procedures would have to be implemented for all on-site work at and within the restrictive fence line.

Under Alternative 2, potential occupational doses to workers involved in removal activities would be due to direct exposure, inhalation, or ingestion of contaminants. Worker exposure and injuries would be reduced through implementation of a comprehensive health and safety program and radiological protection program including the proper use of safety protocols, PPE, and restrictions on access to impacted areas. In addition, machinery and equipment would be inspected after use, surveyed for contamination, and decontaminated if necessary. No occupational or safety barriers that would prevent the implementation of these activities are foreseen. In addition, workers would be provided adequate protection by implementing state and Federal health and safety requirements.

Under Alternative 3, potential occupational doses and injuries to workers involved in removal activities would be very similar to Alternative 2 with the possibility of a temporary increase in generation of fugitive dust containing site COCs resulting from filling containers. Appropriate measures and engineering controls would be used to mitigate the potential for an increase in risk to those in close proximity removal activities as they occur.

Under Alternative 4, potential occupational doses and injuries to workers involved in response activities would be very similar to Alternative 3 with the addition of a long transport route to the disposal facility. Worker exposure would be minimized during transport by inspecting the vehicle(s) before and after use, decontamination of the exterior of waste packages when needed, covering the transported waste, observing safety protocols, and by following pre-designated routes. Transportation risks increase with distance and volume, although the potential for any spillage and resultant worker exposure would be very low. The transport of wastes to an off-site disposal facility would comply with DOT regulations and directives as well as other applicable Federal regulations.

Alternative 5 would be similar to Alternative 3 and Alternative 4. The exception would be the reduced transportation risk associated with shorter transportation distances.

5.1.1.3 Protective of the Environment

This criterion addresses whether an alternative provides adequate protection of the environment. Exposure methods of most importance are direct exposure to the environment local to the site and also spread of contamination off-site.

Under Alternative 1, no removal action would be taken and hence no short-term adverse impacts would be created. However, Deul's Mountain would remain in place and burial pits beneath the soil pile, which may represent sources of soil and groundwater impacts would not be adequately investigated.

Under Alternatives 2, 3, 4 and 5, some short-term environmental damage could be caused by equipment used to perform removal activities. Emissions from cleanup activities

should be well within EPA guidelines regarding ambient air pollution concentrations and are expected to have a negligible effect on the air quality at the Site. Physical damage caused by removal activities would be minimal due to the fact that all remedial activities would be confined to the fenced area. Under Alternatives 3, 4 and 5, long-term environmental damage caused by either the spread of constituents associated with Deul's Mountain or by not identifying and addressing possible burial pits will be mitigated by the removal of Deul's Mountain waste material.

5.1.2 Compliance with ARARs

Alternative 1: Alternative 1 does not comply with chemical-specific or action-specific ARARs given that Alternative 1 does not eliminate the possibility of exposure to radiological impacts and reduce exposure to ALARA in and from the soil pile or allow for adequate characterization of burial pits located beneath the soil pile. There are no location-specific ARARs.

Alternative 2: Alternative 2 does not comply with chemical-specific or action-specific ARARs given that Alternative 2 does not eliminate the possibility of exposure to radiological impacts in and from the soil pile or reduce dose to ALARA. There are no location-specific ARARs.

Alternative 3: Alternative 3 complies with chemical-specific and action-specific ARARs. In addition, it could potentially trigger additional ARARs once the inter-modals are stored on Westinghouse property. There are no location-specific ARARs.

Alternative 4: Alternative 4 complies with chemical-specific and action-specific ARARs. Because it offers a long-term, permanent, off-site disposal solution, no additional ARARs will be triggered. There are no location-specific ARARs.

Alternative 5: Alternative 5 complies with chemical-specific and action-specific ARARs. Because it offers a long-term, permanent, off-site disposal solution, no additional ARARs will be triggered. There are no location-specific ARARs

5.1.3 Useful Life

Under Alternative 1, no up-front construction or remediation activities would be performed, and therefore, would not cause additional short-term risk. However, under Alternative 1, long-term effectiveness is significantly reduced by risks posed from the potential of waste remaining in place to spread contamination.

Under Alternative 2, long-term effectiveness is affected due to a reduced but present residual risk of material remaining on site in open outside storage. There would be a reduction of mobility due to contamination controls and monitoring that would be in place. The short-term effectiveness is reduced due to the potential for worker exposure

during the remedial action. However, this potential exposure is outweighed by the risk of not identifying burial pits beneath Deul's Mountain.

Under Alternatives 2, 3, 4 and 5, short-term effectiveness may be reduced by removal activities. However, under Alternatives 3, 4 and 5 the removal of impacted material would eliminate the potential spread of contamination throughout future years, manage doses to ALARA and allow for a high degree of long-term effectiveness.

In addition, given the fact that the soils in Deul's Mountain will need to be disposed of off-site in order to ensure the doses from the COCs are reduced to ALARA, the useful life of Alternatives 2 and 3 are significantly reduced. In essence, Alternative 2, and 3 simply postpone the ultimate response to address the environmental risks posed by Deul's Mountain, while adding short-term risks and costs associated with relocation/storage of the soil pile on-site.

5.2 Implementability

The implementability criterion encompasses both the technical and administrative feasibility and the availability of required services and materials.

5.2.1 Technical Feasibility

Three important aspects of technical feasibility are: (1) availability and reliability of the processes within a removal alternative; (2) construction and implementation timeframe; and (3) environmental conditions with respect to all relevant phases of the alternative. Implementation time and the period for beneficial results to be realized are critical factors in protecting public health and the environment.

Under Alternatives 1, 2 and 3, the long-term surveillance and/or final disposal of waste material containing long-lived radionuclides (i.e., uranium) may reduce the technical feasibility of these alternatives. Monitoring the effectiveness of these alternatives may be a long-term necessity in order to sustain technical feasibility.

Under Alternatives 1 and 2, maintenance and replacement of postings and fence repair are technically feasible. The timeframe to undertake Alternative 1 will not be an issue. Environmental conditions will play a large role in making Alternatives 1 and 2 not feasible in the long-term due to the potential spread of contamination over time. Severe weather systems would be an example of environmental conditions that could cause the spread of contamination.

Under Alternatives 2, 3, 4 and 5, removal of Deul's Mountain is technically feasible in terms of availability, proven reliability, and timeframe for receipt of necessary equipment and technologies. Potential methods for removal of waste do not require unacceptable levels of uncertainty. These methods have been proven in the industry to be reliable, and technical problems potentially leading to scheduling delays are not anticipated.

Appropriately trained personnel, waste documentation, and tracking systems are also readily available. Environmental conditions may be avoided during remedial processes by working during certain times of the year and environmental conditions.

Under Alternative 3, on-site storage of impacted materials in containers can be accomplished using proper storage containers, engineering and design controls, which will prevent leakage and have sufficient density and thickness to shield gamma exposure, as necessary. Proper storage of material without affecting planned near-term investigation and remediation may complicate technical feasibility due to space limitations and the possibility of cell or containers to degrade over time.

Under Alternatives 4 and 5, commercial disposal of the excavated materials is technically feasible and would reduce potential contaminant mobility. Commercial disposal of the types of wastes that would be encountered is currently available. Appropriate commercial waste disposal facilities are required to maintain environmental monitoring and occupational health programs.

5.2.2 Administrative Feasibility

Administrative feasibility considerations include the potential of a proposed action to achieve response objectives and effectiveness. The administrative feasibility factor evaluates those activities needed to coordinate with other offices, agencies, and the public. These concerns include approval from government agencies and interagency cooperation, transportation factors, procurement of off–site permits, approval for on-site storage and disposal facilities, compliance with policies and requirements, and public acceptance.

Under Alternatives 1, 2, 3, 4, and 5 in order to facilitate overall administrative feasibility, communications with other government agencies and with the public regarding FFCF Site plans and activities will be performed under the direction of Westinghouse.

Under Alternative 1, administrative feasibility may be complicated by concerns of government officials and the public concerning groundwater impacts and the need to perform the site-wide RI.

Under Alternative 2, administrative feasibility may be complicated given that this Alternative requires that impacted material be moved in an uncontrollable fashion. Furthermore, under Alternative 3, administrative feasibility may be complicated by concerns for the long-term integrity of the storage containers and the need to shuffle a large quantity of containers to allow the remedial investigation and subsequent remediation. As the remediation progresses, there may not be sufficient space to store containers.

Under Alternative 4, the transport of wastes to an off-site disposal facility would comply with DOT regulations and directives as well as other applicable Federal regulations. This

would include compliance by subcontractors involved in the remediation and transportation of the waste. The schedule should not be affected if proper planning is performed prior to removal and transportation activities. The activities involved with Alternatives 2 and 4 are common activities and should not provide unforeseen and time-consuming circumstances.

Under Alternative 5, in order to facilitate overall administrative feasibility, communications with other government agencies and with the public regarding Site plans and activities will be performed under the direction of Westinghouse. The transport of wastes to an off-site disposal facility would comply with DOT regulations and directives as well as other applicable Federal regulations. This would include compliance by subcontractors involved in the removal and transportation of the waste.

The removal schedule should not be affected if proper upfront planning is performed. The activities involved with Alternative 5 are common activities and should not provide unforeseen and time-consuming circumstances.

5.3 Cost

The purpose of the EE/CA cost estimate is to compare the relative costs for the various Removal Action Alternatives. Relative capital costs and operational and maintenance costs are used rather than detailed estimates. The cost analysis is based on engineering judgment and each process is evaluated on its cost relative to the other alternative. The basis of this EE/CA cost estimate includes the conservative assumption that there are 1,100 cubic yards of soil to be addressed. Alternative 1 was not estimated for cost. A summary of the costs associated with Alternatives 2, 3, 4 and 5 is presented in Table 5-1.

5.4 Summary of Removal Action Alternatives

This section summarizes the results of the analysis of all Removal Action Alternatives. Each Removal Action Alternative is evaluated for its effectiveness, implementability, and relevant cost.

5.4.1 Alternative 1 in Summary

- Low rank in effectiveness with respect to long-term human and environmental protection.
- Low rank in implementability with respect to concerns of the public concerning groundwater contamination and the need to perform the site-wide RI.
- Low rank in ensuring exposure to ionizing radiation and release of radioactive materials is managed to reduce collective doses ALARA.
- High rank for cost in that the cost is the least expensive alternative at this present time. However, future disposal costs would be incurred thereby eliminating the potential short-term cost savings associated with this Alternative.

Table 5-1: Cost Analysis of Alternatives

Task	Description	Alternative 2 Relocation and Open Storage On-site	Alternative 3 Relocation and Containerized Storage On-site	Alternative 4 Excavation and Off-site Disposal	Alternative 5 Consolidation for Volumetric Clearance for Disposal
1	Mobilization	$10,500	$10,500	$10,500	$10,500
2	Site Preparation	$1,500	$1,500	$1,500	$1,500
3	Excavation, Waste Profiling, and Remediation Surveys	$125,500	$125,500	$125,500	$125,500
4	Sampling (including Independent Verification)	$0	$0	$20,000	$20,000
5	Establishment of Waste Packaging Area, including Barriers and Required Posting	$5,000	$5,000	$5,000	$5,000
6	Site Surveillance	$80,000	$80,000	$8,000	$8,000
7	Waste Containers and Transportation	$103,840	$507,040	$94,400	$18,500
8	Waste Disposal	Included in Task 9	Included in Task 9	$950,400	$303,750
9	Storage on Site, delayed disposal	$1,045,440	$1,045,440	$0	$0
10	Final Report/Waste Tracking	$25,000	$25,000	$25,000	$25,000
11	Project Management	$20,000	$20,000	$10,000	$10,000
	ESTIMATED COST	**$1,416,780**	**$1,819,980**	**$1,250,300**	**$527,750**

Task #7 Alternative 2 includes 3-month container rental plus transportation for disposal escalated by 10%
Alternative 3 includes 7-year container rental plus transportation for disposal escalated by 10%
Alternative 4 includes 3-month container rental plus current cost of transportation
Task #8 1100 Cubic yards at $32.00/ft3 for Waste Disposal
Task #9 Delayed disposal results in a 10% disposal cost increase
On-site storage assumes 62 containers leased at $150.00 per month for 7 years
Super sacks, B-12 and B-25 determined not to be cost effective
Disposal at alternate disposal site (VCD) assumed after 7 years at $25

5.4.2 Alternative 2 in Summary

- Low rank in effectiveness with respect to long-term human and environmental protection. This Alternative allows the impacted soils for Deul's Mountain to remain on-site in an uncontained fashion.
- Low rank in implementability with respect to concerns of the public concerning groundwater contamination.
- Low rank in ensuring exposure to ionizing radiation and release of radioactive materials is managed to reduce collective doses ALARA.
- Medium rank for cost in that the cost is the second most expensive alternative at this present time. Future disposal costs would be incurred, thereby eliminating any cost savings associated with current non-disposal.

5.4.3 Alternative 3 in Summary

- High rank in effectiveness with respect to long-term human and environmental protection.
- High rank in ensuring exposure to ionizing radiation and release of radioactive materials is managed to reduce collective doses ALARA.
- Medium rank in implementability with respect to proper storage of material without affecting planned near-term investigation and remediation. Implementability may be affected due to space limitations and the possibility of containers to degrade over time.
- Low rank in cost due to the cost of container rental and the increased future unknown disposal cost that will be incurred, thereby eliminating any cost savings associated with current non-disposal.

5.4.4 Alternative 4 in Summary

- High rank in effectiveness with respect to long-term human and environmental protection.
- High rank in ensuring exposure to ionizing radiation and release of radioactive materials is managed to reduce collective doses ALARA.
- High rank in implementability with respect to technical and administrative feasibility.
- Medium rank for cost in that the cost is the second least expensive of the viable Alternatives.

5.4.6 Alternative 5 in Summary

- High rank in effectiveness with respect to long-term human and environmental protection.

- High rank in ensuring exposure to ionizing radiation and release of radioactive materials is managed to reduce collective doses ALARA.
- High rank in implementability with respect to technical and administrative feasibility.
- High rank for cost in that the cost is the least expensive of the viable Alternatives.

6.0 COMPARATIVE ANALYSIS OF REMOVAL ACTION ALTERNATIVES

Alternatives were independently evaluated in the preceding sections for effectiveness, implementability, and cost. A summary of alternative analyses is provided in Table 6.1. In this section, Alternatives 1, 2, 3, and 4 and 5 will be comparatively analyzed for effectiveness, implementability and cost.

With respect to long-term effectiveness, Alternatives 4 and 5 are the most effective alternative regarding long-term human health implications. This effectiveness results from the removal of impacted material and facilitation of the site-wide Remedial Investigation under Alternative 4 and 5.

Alternatives 2 and 3 are also effective alternatives regarding short-term human health implications. However, waste remaining on-site, the administrative controls and human health implications with surveillance and cell and container maintenance adversely affect the long-term effectiveness of these alternatives. The positive long-term results of Alternative 3 far outweigh positive short-term results of Alternative 1 and 2, regarding effectiveness.

With respect to implementability, Alternatives 1, 2, 3, 4 and 5 are technically feasible. The four alternatives are administratively feasible by following proper protocols and applicable guidance. However, Alternatives 1, 2 and 3 are likely to be met with resistance from government agencies and/or the public given that these alternatives allow material from Deul's Mountain to remain on-site.

With respect to relative total costs, Alternative 5 is the lowest cost alternative other than the "no-action" alternative, and is estimated to cost $722,550 less than the next lowest alternative, Alternative 4. These costs are estimates and can be affected by unforeseen events and issues. Alternative 3 was estimated out to 7 years due to the anticipated duration of the project and schedule limitations that would require eventual disposal, at higher disposal rates, to complete the project.

Additionally Alternative 5 will reduce the cost of off-site disposal given that the long-term cost of off-site disposal will increase and by disposing of the soil with other impacted materials now (e.g., equipment), a cost benefit can be realized by taking advantage of volumetric disposal rates.

Table 6.1 Evaluation Comparison

Alternative	Description	Effectiveness Ranking	Implementability Ranking	Cost Ranking	Post-Action Monitoring Required	Current Off-site Disposal	Probability of Public and Regulatory Acceptance
1	No Action with Engineering Controls	Low	Low	High	Yes	No	Low
2	Relocation and Open Storage On-Site	Low	Low	Low	Yes	No	Low
3	Relocation and Containerized Storage On-Site	High	Medium	Low	Yes	No	Medium
4	Excavation and Off-Site Disposal of Soil	High	High	Medium	No	Yes	High
5	Excavation, Consolidation VCD	High	High	High	No	Yes	High

7.0 RECOMMENDED REMOVAL ACTION ALTERNATIVE

Based on the results of the comparison of remaining alternatives in Section 6.0, the recommended Removal Action Alternative is Alternative 5.

8.0 EVALUATION OF POST-REMOVAL SITE CONTROL ACTIVITIES NECESSARY TO SUSTAIN THE INTEGRITY OF THE REMOVAL ACTION

Post-removal Site control activities are not necessary to sustain the integrity of the preferred removal action. The removal action only includes above grade soil that was previously excavated. The conduct of a Final Status Survey (FSS) in compliance with guidance from Multi-Agency Radiation Survey and Site Investigation Manual (MARSSIM) is not a component of the removal action. A site wide FSS will be performed, at the appropriate time, to allow for release of the Site for unrestricted use.

9.0 REFERENCES

Comprehensive Environmental Response, Compensation and Liability Act (CERCLA), 42 U.S.C. § 9601 *et seq*.

EPA 1993, *"Guidance on Conducting Non-Time-Critical Removal Actions Under CERCLA,"* EPA 520-R-93-057, August 1993.

National Contingency Plan (NCP), 40 C.F.R. § 300.1 *et seq*.

10 CFR 20.1402, *Radiological Criteria for Unrestricted Use*

Appendix A
Westinghouse Electric Co.
Analytical Data

Report of Analysis

7/26/02 8:24:27AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

RT N. HORTON

Sample ID: **D-HILL 1** | **L18538** | Collect Start: 06/14/02 10:30
Station: | WESTINGHOUSE | Collect Stop:
Description: | | Received: 06/17/02
MS Number: L18538-1 | AB018-3EREGXXPOMO | Matrix: Soil (S)
TI Number: 75256 | | Volume:

adionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
33/234 (AS)	062-110	**2.70E+001**	3.20E+000		pCi/g				06/24/02			+		
35 (AS)	062-110	**1.11E+000**	2.30E-001		pCi/g				06/24/02			+		
38 (AS)	062-110	**4.54E+000**	6.30E-001		pCi/g				06/24/02			+		

nments:

Sample ID: **D-HILL 1** | **L18538** | Collect Start: 06/14/02 10:30
Station: | WESTINGHOUSE | Collect Stop:
Description: | | Received: 06/17/02
MS Number: L18538-2 | AB018-3EREGXXPOMO | Matrix: Miscellaneous (Z)
TI Number: 71071 | | Volume:

adionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
CONTRACT		-Completed												

nments: TCLP VOC,SVOC, METALS

Sample ID: **D-HILL 2** | **L18538** | Collect Start: 06/14/02 10:30
Station: | WESTINGHOUSE | Collect Stop:
Description: | | Received: 06/17/02
MS Number: L18538-3 | AB018-3EREGXXPOMO | Matrix: Soil (S)
TI Number: 75257 | | Volume:

adionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
33/234 (AS)	062-110	**1.19E+001**	1.60E+000		pCi/g				06/24/02			+		
35 (AS)	062-110	**4.46E-001**	1.42E-001		pCi/g				06/24/02			+		
38 (AS)	062-110	**1.53E+000**	2.90E-001		pCi/g				06/24/02			+		

nments:

; Values
= Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
= Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
h = Activity concentration exceeds customer reporting value
c = MDC exceeds customer technical specification
= Peak not identified in gamma spectrum
= Peak identified in gamma spectrum
lded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

7/26/02 9:00:52AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **D-HILL 2**
Station:
Description:
MS Number: L18538-4
TI Number: 71072

L18538
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 06/14/02 10:30
Collect Stop:
Received: 06/17/02
Matrix: Miscellaneous (Z)
Volume:

adionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
3CONTRACT		-Completed												

nments: TCLP VOC,SVOC, METALS

g Values
= Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
= Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
h = Activity concentration exceeds customer reporting value
c = MDC exceeds customer technical specification
= Peak not identified in gamma spectrum
; = Peak identified in gamma spectrum

lded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

BROWN ENGINEERING, INC.
A Tots*yns 7IchnalD*s Comp ny
2505 Quality Lane Knoxville, TN
37931-3133

WESTINGHOUSE
NUCLEAR FUEL
3300 STATE ROAD P
FESTUS MO 63028
Attn: CORT N. HORTON

Report of Analysis/Certificate of Conformance

8/26/02

LIMS #:	L18884
Project ID#:	AB018-3EREGXXPOMO
Received:	8/8/02
Delivery Date:	9/7/02
P.O. # :	SA20000050 L/I 1
Release #:	

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#

Report of Analysis

8/26/02 2:28:08PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

CORT N. HORTON

Sample ID: **DH-3**
Station:
Description:
LIMS Number: L18884-1
TI Number: 77138

L18884
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/06/02 0:00
Collect Stop:
Received: 08/08/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**1.93E+001**	5.86E+000		pCi/g Dry	1.000	G		08/24/02	50	M	+		
GR-B	032-15	**4.92E+001**	3.38E+000		pCi/g Dry	1.000	G		08/24/02	50	M	+		

Comments:

Sample ID: **DH-4**
Station:
Description:
LIMS Number: L18884-2
TI Number: 77139

L18884
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/06/02 0:00
Collect Stop:
Received: 08/08/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	<		**3.87E+000**	pCi/g Dry	1.000	G		08/24/02	50	M			
GR-B	032-15	**9.11E+000**	1.75E+000		pCi/g Dry	1.000	G		08/24/02	50	M	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

C18807

PACKING LIST

E-20C

Ship To: Teledyne Rad Analytical
2508 Quality Lane
Knoxville, TN 37931-3133

Date: 8/6/02

Send Report To: Westinghouse Electric Co.

Address: 3300 State Road P, P.O. Box 107

City,State: Festus, Mo. Zip: 63028

Attention: Bill Sharkey Telephone Number (314) 937-4691 x 399

Purchase Order No. _____ FAX Number (314) 937-7955

Turn around Time: (X) 28 Day ( ) 14 Day ( ) 5 Day

Sample ID	Collection Date	Sample ID	Collection Date
DH-3	8/6/02	77138	
DH-4	8/6/02	77139	

Please analyze samples for the following; (Check by use of an "X" for your requirements)

Analyze Water Samples For:

(X) Gross Alpha & Gross Beta ~~(X) Following~~

Additional Analysis (12 week) U-Isotopic (Normal) TCLP- Metals per Cent

C. Horton telephone conversation 8/27/02

8/8/02
M. Jordan

Authorized Signature

HPF8049

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

WESTINGHOUSE
NUCLEAR FUEL
3300 STATE ROAD P
FESTUS MO 63028
Attn: CORT N. HORTON

Report of Analysis/Certificate of Conformance

9/3/02

LIMS #: L19015
Project ID#: AB018-3EREGXXPOMO
Received: 8/27/02
Delivery Date: 9/3/02
P.O. # : SA20000050 L/I 1
Release #:

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
DH-3	L19015-1	77827
DH-4	L19015-2	77828

Report of Analysis

9/3/02 4:51:44PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

CORT N. HORTON

Sample ID: DH-3
Station:
Description:
LIMS Number: L19015-1
TI Number: 77827

L19015
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/06/02 0:00
Collect Stop:
Received: 08/27/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-233/234 (AS)	062-110	8.45E+000	1.38E+000		pCi/g				08/30/02	60,007	seconds	+		
U-235 (AS)	062-110	2.80E-001	1.66E-001		pCi/g				08/30/02	60,007	seconds	+		
U-238 (AS)	062-110	1.99E+000	4.73E-001		pCi/g				08/30/02	60,007	seconds	+		

Comments:

Sample ID: DH-4
Station:
Description:
LIMS Number: L19015-2
TI Number: 77828

L19015
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/06/02 0:00
Collect Stop:
Received: 08/27/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-233/234 (AS)	062-110	9.20E+000	1.51E+000		pCi/g				08/30/02	60,001	seconds	+		
U-235 (AS)	062-110	3.78E-001	2.12E-001		pCi/g				08/30/02	60,001	seconds	+		
U-238 (AS)	062-110	1.75E+000	4.43E-001		pCi/g				08/30/02	60,001	seconds	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum

**** Results are reported on an as received basis unless otherwise noted

BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

WESTINGHOUSE
NUCLEAR FUEL
3300 STATE ROAD P
FESTUS MO 63028
Attn: CORT N. HORTON

Report of Analysis/Certificate of Conformance

9/27/02

LIMS #: L19061
Project ID#: AB018-3EREGXXPOMO
Received: 8/30/02
Delivery Date: 9/27/02
P.O. # : SA20000050 L/I 1
Release #:
SDG #: N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
DH5	L19061-1	78015
DH6	L19061-2	78016
DH7	L19061-3	78017
DH8	L19061-4	78018

Report of Analysis

9/27/02 1:15:18PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

CORT N. HORTON

Sample ID: **DH5**
Station:
Description:
LIMS Number: L19061-1 (78015)
% Moisture:

L19061
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/28/02 0:00
Collect Stop:
Received: 08/30/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**3.70E+001**	8.08E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
GR-B	032-15	**6.57E+001**	3.94E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
U-233/234 (AS)	062-110	**5.52E+001**	4.62E+000		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-235 (AS)	062-110	**2.51E+000**	3.57E-001		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-238 (AS)	062-110	**1.12E+001**	1.06E+000		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		

Comments:

Sample ID: **DH6**
Station:
Description:
LIMS Number: L19061-2 (78016)
% Moisture:

L19061
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/28/02 0:00
Collect Stop:
Received: 08/30/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**3.81E+001**	8.19E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
GR-B	032-15	**6.96E+001**	4.04E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
U-233/234 (AS)	062-110	**4.42E+001**	3.79E+000		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-235 (AS)	062-110	**1.77E+000**	2.91E-001		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-238 (AS)	062-110	**7.21E+000**	7.45E-001		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		

Comments:

Flag Values
F = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **DH7**
Station:
Description:
LIMS Number: L19061-3 (78017)
% Moisture:

L19061
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/28/02 0:00
Collect Stop:
Received: 08/30/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**2.31E+001**	6.62E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
GR-B	032-15	**1.69E+001**	2.25E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
U-233/234 (AS)	062-110	**2.13E+001**	1.86E+000		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-235 (AS)	062-110	**9.59E-001**	1.95E-001		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-238 (AS)	062-110	**2.09E+000**	2.91E-001		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		

Comments:

Sample ID: **DH8**
Station:
Description:
LIMS Number: L19061-4 (78018)
% Moisture:

L19061
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/28/02 0:00
Collect Stop:
Received: 08/30/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**4.39E+001**	8.71E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
GR-B	032-15	**6.17E+001**	3.83E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
U-233/234 (AS)	062-110	**7.96E+001**	7.46E+000		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-235 (AS)	062-110	**3.03E+000**	4.59E-001		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		
U-238 (AS)	062-110	**9.20E+000**	1.02E+000		pCi/g Dry	0.500	g Dry		09/18/02	60,000	seconds	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

PACKING LIST

R-21C

L19061

Ship To: Teledyne Rad Analytical
2508 Quality Lane
Knoxville, TN 37931-3133

Date: 8/28/02

Send Report To: Westinghouse Electric Co.

Address: 3300 State Road P, P.O. Box 107

City,State: Festus, Mo. Zip: 63028

Attention: Bill Sharkey Telephone Number (314) 937-4691 x 399

Purchase Order No. FAX Number (314) 937-7955

Turn around Time: (X) 28 Day ( ) 14 Day ( ) 5 Day

Sample ID	Collection Date	Sample ID	Collection Date
DH5	8/28/02	78015	
DH6	8/28/02	78016	
DH7	8/28/02	78017	
DH8	8/28/02	78018	

Please analyze samples for the following; (Check by use of an "X" for your requirements)

Analyze Soil Samples For:

(X) Gross Alpha & Gross Beta

Additional Analysis Isotopic Analysis

8/30/02 Monett Sorden

Daniel A. Abett

Authorized Signature

HPF8049

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

WESTINGHOUSE
NUCLEAR FUEL
3300 STATE ROAD P
FESTUS MO 63028
Attn: CORT N. HORTON

Report of Analysis/Certificate of Conformance

9/27/02

LIMS #: L19081
Project ID#: AB018-3EREGXXPOMO
Received: 9/4/02
Delivery Date: 10/4/02
P.O. # : SA20000050 L/I 1
Release #:
SDG #: N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
DH10	L19081-1	78076
DH9	L19081-2	78077

Report of Analysis

9/27/02 1:15:19PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

CORT N. HORTON

Sample ID: **DH10**
Station:
Description:
LIMS Number: L19081-1 (78076)
% Moisture:

L19081
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/29/02 0:00
Collect Stop:
Received: 09/04/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**3.00E+001**	7.31E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
GR-B	032-15	**4.49E+001**	3.28E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
U-233/234 (AS)	062-110	**4.60E+001**	3.75E+000		pCi/g Dry	0.500	g Dry		09/19/02	60,002	seconds	+		
U-235 (AS)	062-110	**1.81E+000**	2.81E-001		pCi/g Dry	0.500	g Dry		09/19/02	60,002	seconds	+		
U-238 (AS)	062-110	**5.68E+000**	5.87E-001		pCi/g Dry	0.500	g Dry		09/19/02	60,002	seconds	+		

Comments:

Sample ID: **DH9**
Station:
Description:
LIMS Number: L19081-2 (78077)
% Moisture:

L19081
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 08/29/02 0:00
Collect Stop:
Received: 09/04/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**1.93E+001**	6.06E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
GR-B	032-15	**2.10E+001**	2.37E+000		pCi/g Dry	1.000	G		09/10/02	50	M	+		
U-233/234 (AS)	062-110	**2.19E+001**	1.72E+000		pCi/g Dry	0.500	g Dry		09/19/02	60,001	seconds	+		
U-235 (AS)	062-110	**8.79E-001**	1.67E-001		pCi/g Dry	0.500	g Dry		09/19/02	60,001	seconds	+		
U-238 (AS)	062-110	**2.35E+000**	2.84E-001		pCi/g Dry	0.500	g Dry		09/19/02	60,001	seconds	+		

Comments:

Flag Values
- = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
- = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum

Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

LTW81

PACKING LIST

E-24C

Ship To: **Teledyne Rad Analytical**
2508 Quality Lane
Knoxville, TN 37931-3133

Date: _____

Send Report To: Westinghouse Electric Co.

Address: 3300 State Road P, P.O. Box 107

City,State: Festus, Mo. Zip: 63028

Attention: Bill Sharkey Telephone Number (314) 937-4691 x 399

Purchase Order No. _____ FAX Number (314) 937-7955

Turn around Time: **(X) 28 Day ( ) 14 Day ( ) 5 Day**

Sample ID	Collection Date	Sample ID	Collection Date
DH 10	~~8/28/02~~ 8/27/02	78076	
DH 9	~~8/28/02~~ 8/28/02	78077	

Please analyze samples for the following; (Check by use of an "X" for your requirements)

Analyze Soil Samples For:

(X) Gross Alpha & Gross Beta

Additional Analysis Isotopic Analysis

9/4/02 Monett Sachs

Authorized Signature

HPF8049

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

WESTINGHOUSE
NUCLEAR FUEL
3300 STATE ROAD P
FESTUS MO 63028
Attn: CORT N. HORTON

Report of Analysis/Certificate of Conformance

10/19/02

LIMS #:	L19178
Project ID#:	AB018-3EREGXXPOMO
Received:	9/18/02
Delivery Date:	10/18/02
P.O. # :	SA20000050 L/I 1
Release #:	
SDG #:	N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
DH-11	L19178-1	78687
DH-12	L19178-2	78688
DH-13	L19178-3	78689
DH-14	L19178-4	78690

Report of Analysis

10/18/02 4:43:06PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

CORT N. HORTON

Sample ID: **DH-11**
Station:
Description:
LIMS Number: L19178-1 (78687)
% Moisture:

L19178
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 09/13/02 0:00
Collect Stop:
Received: 09/18/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**3.50E+001**	7.36E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
GR-B	032-15	**4.52E+001**	3.26E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
U-233/234 (AS)	062-110	**8.68E+001**	8.86E+000		pCi/g	0.500	g		10/09/02	60,003	seconds	+		
U-235 (AS)	062-110	**2.71E+000**	4.64E-001		pCi/g	0.500	g		10/09/02	60,003	seconds	+		
U-238 (AS)	062-110	**2.96E+000**	4.66E-001		pCi/g	0.500	g		10/09/02	60,003	seconds	+		

Comments:

Sample ID: **DH-12**
Station:
Description:
LIMS Number: L19178-2 (78688)
% Moisture:

L19178
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 09/13/02 0:00
Collect Stop:
Received: 09/18/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**2.71E+001**	6.53E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
GR-B	032-15	**5.41E+001**	3.53E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
U-233/234 (AS)	062-110	**2.87E+001**	3.06E+000		pCi/g	0.500	g		10/09/02	60,002	seconds	+		
U-235 (AS)	062-110	**9.48E-001**	2.42E-001		pCi/g	0.500	g		10/09/02	60,002	seconds	+		
U-238 (AS)	062-110	**2.03E+000**	3.56E-001		pCi/g	0.500	g		10/09/02	60,002	seconds	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

10/18/02 4:48:47PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **DH-13**
Station:
Description:
LIMS Number: L19178-3 (78689)
% Moisture:

L19178
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 09/13/02 0:00
Collect Stop:
Received: 09/18/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**2.94E+001**	6.77E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
GR-B	032-15	**4.57E+001**	3.27E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
U-233/234 (AS)	062-110	**3.44E+001**	3.00E+000		pCi/g	0.500	g		10/09/02	60,000	seconds	+		
U-235 (AS)	062-110	**1.23E+000**	2.32E-001		pCi/g	0.500	g		10/09/02	60,000	seconds	+		
U-238 (AS)	062-110	**2.32E+000**	3.22E-001		pCi/g	0.500	g		10/09/02	60,000	seconds	+		

Comments:

Sample ID: **DH-14**
Station:
Description:
LIMS Number: L19178-4 (78690)
% Moisture:

L19178
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 09/13/02 0:00
Collect Stop:
Received: 09/18/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**2.19E+001**	5.90E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
GR-B	032-15	**3.79E+001**	3.01E+000		pCi/g Dry	1.000	G		09/30/02	50	M	+		
U-233/234 (AS)	062-110	**2.74E+001**	2.05E+000		pCi/g	0.500	g		10/09/02	60,000	seconds	+		
U-235 (AS)	062-110	**8.05E-001**	1.55E-001		pCi/g	0.500	g		10/09/02	60,000	seconds	+		
U-238 (AS)	062-110	**3.69E+000**	3.78E-001		pCi/g	0.500	g		10/09/02	60,000	seconds	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum

**** Results are reported on an as received basis unless otherwise noted

E-20C

Ship To: **Teledyne Brown Engineering**
2508 Quality Lane
Knoxville, TN 37931-3133

Date: 13-Sep-02

Send Report To: Westinghouse Electric Corp

Address: 3300 State Road P

City,State: Festus, MO Zip: 63028

Attention: Kevin Hayes Telephone Number (314) 937-4691 x464

Purchase Order No. 9950021

Turn around Time: ( ) 28 Day (X) 14 Day ( ) 5 Day

Sample ID	Collection Date	Sample ID	Collection Date
DH-11	13-Sep-02	78687	
DH-12	13-Sep-02	78688	
DH-13	13-Sep-02	78689	
DH-14	13-Sep-02	78690	

Please analyze samples for the following; (Check by use of an "X" for your requirements)

ANALYZE SOIL SAMPLES FOR,

(X) Gross Alpha & Gross Beta

Additional Analysis : Isotopic Analysis

Comments :

Authorized Signature

9/18/02 mg

HPF8057

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

WESTINGHOUSE
NUCLEAR FUEL
3300 STATE ROAD P
FESTUS MO 63028
Attn: CORT N. HORTON

Report of Analysis/Certificate of Conformance

10/15/02

LIMS #: L19304
Project ID#: AB018-3EREGXXPOMO
Received: 10/4/02
Delivery Date: 10/18/02
P.O. # : SA20000050 L/I 1
Release #:
SDG #: N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
DH15	L19304-2	80662
DH16	L19304-3	80663

Report of Analysis

10/15/02 1:28:35PM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

CORT N. HORTON

Sample ID: DH15
Station:
Description:
LIMS Number: L19304-2 (80662)
% Moisture:

L19304
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 10/01/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**1.94E+001**	5.58E+000		pCi/g Dry	1.000	G		10/11/02	50	M	+		
GR-B	032-15	**5.13E+001**	3.48E+000		pCi/g Dry	1.000	G		10/11/02	50	M	+		
U-233/234 (AS)	062-110	**9.54E+000**	8.53E-001		pCi/g	0.500	g		10/10/02	60,002	seconds	+		
U-235 (AS)	062-110	**3.15E-001**	9.97E-002		pCi/g	0.500	g		10/10/02	60,002	seconds	+		
U-238 (AS)	062-110	**1.70E+000**	2.38E-001		pCi/g	0.500	g		10/10/02	60,002	seconds	+		

Comments:

Sample ID: DH16
Station:
Description:
LIMS Number: L19304-3 (80663)
% Moisture:

L19304
WESTINGHOUSE
AB018-3EREGXXPOMO

Collect Start: 10/01/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
GR-A	032-15	**9.19E+000**	4.05E+000		pCi/g Dry	1.000	G		10/11/02	50	M	+		
GR-B	032-15	**3.19E+001**	2.86E+000		pCi/g Dry	1.000	G		10/11/02	50	M	+		
U-233/234 (AS)	062-110	**3.92E+000**	4.08E-001		pCi/g	0.500	g		10/10/02	60,000	seconds	+		
U-235 (AS)	062-110	**1.46E-001**	6.59E-002		pCi/g	0.500	g		10/10/02	60,000	seconds	+		
U-238 (AS)	062-110	**9.44E-001**	1.60E-001		pCi/g	0.500	g		10/10/02	60,000	seconds	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

SEVERN TRENT SERVICES

STL Knoxville
5815 Middlebrook Pike
Knoxville, TN 37921-5947

Tel: 865-291-3000
Fax: 865-584-4315
www.stl-inc.com

ANALYTICAL REPORT

TCLP Samples

Lot #: H2F190244

Rebecca Charles

Teledyne Brown Engineering
2508 Quality Lane
Knoxville, TN 37931-3133

SEVERN TRENT LABORATORIES, INC.

Jamie A. McKinney
Project Manager

July 17, 2002

ANALYTICAL METHODS SUMMARY

H2F190244

PARAMETER	ANALYTICAL METHOD
Inductively Coupled Plasma (ICP) Metals	SW846 6010B
Mercury in Liquid Waste (Manual Cold-Vapor)	SW846 7470A
Semivolatile Organic Compounds by GC/MS	SW846 8270C
Volatile Organics by GC/MS	SW846 8260B

References:

SW846 "Test Methods for Evaluating Solid Waste, Physical/Chemical Methods", Third Edition, November 1986 and its updates.

SAMPLE SUMMARY

H2F190244

WO #	SAMPLE#	CLIENT SAMPLE ID	SAMPLED DATE	SAMP TIME
E3A3L	001	71071	06/14/02	10:30
E3A3N	002	71072	06/14/02	10:30

NOTE(S):

- The analytical results of the samples listed above are presented on the following pages.
- All calculations are performed before rounding to avoid round-off errors in calculated results.
- Results noted as "ND" were not detected at or above the stated limit.
- This report must not be reproduced, except in full, without the written approval of the laboratory.
- Results for the following parameters are never reported on a dry weight basis: color, corrosivity, density, flashpoint, ignitability, layers, odor, paint filter test, pH, porosity pressure, reactivity, redox potential, specific gravity, spot tests, solids, solubility, temperature, viscosity, and weight.

PROJECT NARRATIVE
H2F190244

The results reported herein are applicable to the samples submitted for analysis only.

This report shall not be reproduced except in full, without the written approval of the laboratory.

The original chain of custody documentation is included with this report.

Sample Receipt

There were no problems with the condition of the samples received.

Quality Control

Unless otherwise noted, all holding times and QC criteria were met and the test results shown in this report meet all applicable NELAC requirements.

Semivolatiles

Surrogate recoveries for sample 71071 were outside QC limits and a re-extraction and reanalysis were performed outside of the holding time. The results for the re-extraction indicated that the original recoveries were outside limits due to laboratory error; both sets of data are presented for compliance purposes.

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71071

TCLP GC/MS Volatiles

Lot-Sample #...:	H2F190244-001	Work Order #...:	E3A3L1AA	Matrix.....:	SOLID
Date Sampled...:	06/14/02	Date Received..:	06/19/02		
Leach Date.....:	06/24/02	Prep Date.....:	06/25/02	Analysis Date..:	06/25/02
Leach Batch #..:	P217501	Prep Batch #...:	2176315		
Dilution Factor:	1				
% Moisture.....:		Method.....:	SW846 8260B		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	0.050	mg/L
Carbon tetrachloride	ND	0.050	mg/L
Chlorobenzene	ND	0.050	mg/L
Chloroform	ND	0.050	mg/L
1,2-Dichloroethane	ND	0.050	mg/L
1,1-Dichloroethylene	ND	0.050	mg/L
Methyl ethyl ketone	ND	0.20	mg/L
Tetrachloroethylene	ND	0.050	mg/L
Trichloroethylene	ND	0.050	mg/L
Vinyl chloride	ND	0.10	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	96	(77 - 123)
1,2-Dichloroethane-d4	103	(80 - 122)
Toluene-d8	100	(80 - 120)
Bromofluorobenzene	100	(74 - 137)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71072

TCLP GC/MS Volatiles

Lot-Sample #...: H2F190244-002	Work Order #...: E3A3N1AA	Matrix.....: SOLID
Date Sampled...: 06/14/02	Date Received..: 06/19/02	
Leach Date.....: 06/24/02	Prep Date.....: 06/25/02	Analysis Date..: 06/25/02
Leach Batch #..: P217501	Prep Batch #...: 2176315	
Dilution Factor: 1		
% Moisture.....:	Method.....: SW846 8260B	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
Benzene	ND	0.050	mg/L
Carbon tetrachloride	ND	0.050	mg/L
Chlorobenzene	ND	0.050	mg/L
Chloroform	ND	0.050	mg/L
1,2-Dichloroethane	ND	0.050	mg/L
1,1-Dichloroethylene	ND	0.050	mg/L
Methyl ethyl ketone	ND	0.20	mg/L
Tetrachloroethylene	ND	0.050	mg/L
Trichloroethylene	ND	0.050	mg/L
Vinyl chloride	ND	0.10	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	104	(77 - 123)
1,2-Dichloroethane-d4	114	(80 - 122)
Toluene-d8	97	(80 - 120)
Bromofluorobenzene	102	(74 - 137)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

METHOD BLANK REPORT

TCLP GC/MS Volatiles

Client Lot #...: H2F190244 **Work Order #...:** E3KDG1AA **Matrix.....:** SOLID
MB Lot-Sample #: H2F240000-130
Leach Date.....: 06/24/02 **Prep Date.....:** 06/25/02 **Analysis Date..:** 06/25/02
Leach Batch #..: P217501 **Prep Batch #...:** 2176315
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
Benzene	ND	0.050	mg/L	SW846 8260B
Carbon tetrachloride	ND	0.050	mg/L	SW846 8260B
Chlorobenzene	ND	0.050	mg/L	SW846 8260B
Chloroform	ND	0.050	mg/L	SW846 8260B
1,2-Dichloroethane	ND	0.050	mg/L	SW846 8260B
1,1-Dichloroethylene	ND	0.050	mg/L	SW846 8260B
Methyl ethyl ketone	ND	0.20	mg/L	SW846 8260B
Tetrachloroethylene	ND	0.050	mg/L	SW846 8260B
Trichloroethylene	ND	0.050	mg/L	SW846 8260B
Vinyl chloride	ND	0.10	mg/L	SW846 8260B

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	98	(77 - 123)
1,2-Dichloroethane-d4	103	(80 - 122)
Toluene-d8	100	(80 - 120)
Bromofluorobenzene	105	(74 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Volatiles

Client Lot #...: H2F190244 Work Order #...: E3ML01AA Matrix.....: SOLID
LCS Lot-Sample#: H2F250000-315
Prep Date.....: 06/25/02 Analysis Date..: 06/25/02
Prep Batch #...: 2176315
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
Benzene	**102**	**(74 - 120)**	**SW846 8260B**
Carbon tetrachloride	**99**	**(64 - 134)**	**SW846 8260B**
Chlorobenzene	**104**	**(76 - 120)**	**SW846 8260B**
Chloroform	**100**	**(74 - 120)**	**SW846 8260B**
1,2-Dichloroethane	**115**	**(70 - 125)**	**SW846 8260B**
1,1-Dichloroethylene	**104**	**(74 - 120)**	**SW846 8260B**
Methyl ethyl ketone	**106**	**(39 - 138)**	**SW846 8260B**
Tetrachloroethylene	**101**	**(74 - 120)**	**SW846 8260B**
Trichloroethylene	**106**	**(76 - 120)**	**SW846 8260B**
Vinyl chloride	**119**	**(66 - 120)**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	96	(77 - 123)
1,2-Dichloroethane-d4	102	(80 - 122)
Toluene-d8	101	(80 - 120)
Bromofluorobenzene	98	(74 - 137)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Volatiles

Client Lot #...: H2F190244 **Work Order #...:** E3ML01AA **Matrix.....:** SOLID
LCS Lot-Sample#: H2F250000-315
Prep Date.....: 06/25/02 **Analysis Date..:** 06/25/02
Prep Batch #...: 2176315
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
Benzene	**0.200**	**0.203**	**mg/L**	**102**	**SW846 8260B**
Carbon tetrachloride	**0.200**	**0.198**	**mg/L**	**99**	**SW846 8260B**
Chlorobenzene	**0.200**	**0.209**	**mg/L**	**104**	**SW846 8260B**
Chloroform	**0.200**	**0.200**	**mg/L**	**100**	**SW846 8260B**
1,2-Dichloroethane	**0.200**	**0.229**	**mg/L**	**115**	**SW846 8260B**
1,1-Dichloroethylene	**0.200**	**0.208**	**mg/L**	**104**	**SW846 8260B**
Methyl ethyl ketone	**0.800**	**0.852**	**mg/L**	**106**	**SW846 8260B**
Tetrachloroethylene	**0.200**	**0.202**	**mg/L**	**101**	**SW846 8260B**
Trichloroethylene	**0.200**	**0.212**	**mg/L**	**106**	**SW846 8260B**
Vinyl chloride	**0.200**	**0.238**	**mg/L**	**119**	**SW846 8260B**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
Dibromofluoromethane	96	(77 - 123)
1,2-Dichloroethane-d4	102	(80 - 122)
Toluene-d8	101	(80 - 120)
Bromofluorobenzene	98	(74 - 137)

NOTE(S) :

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71071

TCLP GC/MS Semivolatiles

Lot-Sample #...: H2F190244-001	Work Order #...: E3A3L1AC	Matrix.....: SOLID
Date Sampled...: 06/14/02	Date Received..: 06/19/02	
Leach Date.....: 06/24/02	Prep Date.....: 06/26/02	Analysis Date..: 07/01/02
Leach Batch #..: P217502	Prep Batch #...: 2177374	
Dilution Factor: 1		
% Moisture.....:	Method.....: SW846 8270C	

PARAMETER	RESULT	REPORTING LIMIT	UNITS
o-Cresol	ND	0.050	mg/L
m-Cresol & p-Cresol	ND	0.10	mg/L
1,4-Dichlorobenzene	ND	0.050	mg/L
2,4-Dinitrotoluene	ND	0.050	mg/L
Hexachlorobenzene	ND	0.050	mg/L
Hexachlorobutadiene	ND	0.050	mg/L
Hexachloroethane	ND	0.050	mg/L
Nitrobenzene	ND	0.050	mg/L
Pentachlorophenol	ND	0.25	mg/L
Pyridine	ND	0.10	mg/L
2,4,5-Trichloro-phenol	ND	0.050	mg/L
2,4,6-Trichloro-phenol	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	2.4 *	(19 - 100)
Phenol-d5	2.4 *	(15 - 124)
Nitrobenzene-d5	66	(35 - 122)
2-Fluorobiphenyl	39	(34 - 115)
2,4,6-Tribromophenol	3.4 *	(33 - 130)
Terphenyl-d14	76	(28 - 132)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

* Surrogate recovery is outside stated control limits.

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71071

GC/MS Semivolatiles

Lot-Sample #...: H2F190244-001 Work Order #...: E3A3L3AC Matrix.....: SOLID
Date Sampled...: 06/14/02 Date Received..: 06/19/02
Prep Date.....: 07/09/02 Analysis Date..: 07/15/02
Prep Batch #...: 2190331
Dilution Factor: 1
% Moisture.....: Method.....: SW846 8270C

PARAMETER	RESULT	REPORTING LIMIT	UNITS
o-Cresol	ND	0.050	mg/L
m-Cresol & p-Cresol	ND	0.10	mg/L
1,4-Dichlorobenzene	ND	0.050	mg/L
2,4-Dinitrotoluene	ND	0.050	mg/L
Hexachlorobenzene	ND	0.050	mg/L
Hexachlorobutadiene	ND	0.050	mg/L
Hexachloroethane	ND	0.050	mg/L
Nitrobenzene	ND	0.050	mg/L
Pentachlorophenol	ND	0.25	mg/L
Pyridine	ND	0.10	mg/L
2,4,5-Trichloro-phenol	ND	0.050	mg/L
2,4,6-Trichloro-phenol	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	86	(19 - 100)
Phenol-d5	94	(15 - 124)
Nitrobenzene-d5	102	(35 - 122)
2-Fluorobiphenyl	95	(34 - 115)
2,4,6-Tribromophenol	93	(33 - 130)
Terphenyl-d14	102	(28 - 132)

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71072

TCLP GC/MS Semivolatiles

Lot-Sample #...:	H2F190244-002	**Work Order #...:**	E3A3N1AC	**Matrix.....:**	SOLID
Date Sampled...:	06/14/02	**Date Received..:**	06/19/02		
Leach Date.....:	06/24/02	**Prep Date.....:**	06/26/02	**Analysis Date..:**	07/01/02
Leach Batch #..:	P217502	**Prep Batch #...:**	2177374		
Dilution Factor:	1				
% Moisture.....:		**Method.....:**	SW846 8270C		

PARAMETER	RESULT	REPORTING LIMIT	UNITS
o-Cresol	ND	0.050	mg/L
m-Cresol & p-Cresol	ND	0.10	mg/L
1,4-Dichlorobenzene	ND	0.050	mg/L
2,4-Dinitrotoluene	ND	0.050	mg/L
Hexachlorobenzene	ND	0.050	mg/L
Hexachlorobutadiene	ND	0.050	mg/L
Hexachloroethane	ND	0.050	mg/L
Nitrobenzene	ND	0.050	mg/L
Pentachlorophenol	ND	0.25	mg/L
Pyridine	ND	0.10	mg/L
2,4,5-Trichloro-phenol	ND	0.050	mg/L
2,4,6-Trichloro-phenol	ND	0.050	mg/L

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	52	(19 - 100)
Phenol-d5	59	(15 - 124)
Nitrobenzene-d5	89	(35 - 122)
2-Fluorobiphenyl	100	(34 - 115)
2,4,6-Tribromophenol	75	(33 - 130)
Terphenyl-d14	91	(28 - 132)

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

METHOD BLANK REPORT

TCLP GC/MS Semivolatiles

Client Lot #...: H2F190244 **Work Order #...:** E3KD11AK **Matrix.....:** SOLID
MB Lot-Sample #: H2F240000-138
Leach Date.....: 06/24/02 **Prep Date.....:** 06/26/02 **Analysis Date..:** 07/01/02
Leach Batch #..: P217502 **Prep Batch #...:** 2177374
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
o-Cresol	ND	0.050	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.10	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.050	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.050	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.050	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.050	mg/L	SW846 8270C
Hexachloroethane	ND	0.050	mg/L	SW846 8270C
Nitrobenzene	ND	0.050	mg/L	SW846 8270C
Pentachlorophenol	ND	0.25	mg/L	SW846 8270C
Pyridine	ND	0.10	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.050	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.050	mg/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	70	(19 - 100)
Phenol-d5	63	(15 - 124)
Nitrobenzene-d5	97	(35 - 122)
2-Fluorobiphenyl	76	(34 - 115)
2,4,6-Tribromophenol	78	(33 - 130)
Terphenyl-d14	91	(28 - 132)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 Work Order #...: E3QJP1AA Matrix.....: SOLID
LCS Lot-Sample#: H2F260000-374
Prep Date.....: 06/26/02 Analysis Date..: 07/01/02
Prep Batch #...: 2177374
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD
o-Cresol	**77**	**(34 - 118)**	**SW846 8270C**
m-Cresol & p-Cresol	**80**	**(29 - 134)**	**SW846 8270C**
1,4-Dichlorobenzene	**83**	**(34 - 104)**	**SW846 8270C**
2,4-Dinitrotoluene	**95**	**(47 - 122)**	**SW846 8270C**
Hexachlorobenzene	**88**	**(42 - 139)**	**SW846 8270C**
Hexachlorobutadiene	**77**	**(28 - 105)**	**SW846 8270C**
Hexachloroethane	**81**	**(24 - 103)**	**SW846 8270C**
Nitrobenzene	**92**	**(30 - 135)**	**SW846 8270C**
Pentachlorophenol	**95**	**(29 - 124)**	**SW846 8270C**
Pyridine	**68**	**(10 - 128)**	**SW846 8270C**
2,4,5-Trichloro-phenol	**77**	**(43 - 124)**	**SW846 8270C**
2,4,6-Trichloro-phenol	**77**	**(42 - 114)**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	59	(19 - 100)
Phenol-d5	75	(15 - 124)
Nitrobenzene-d5	86	(35 - 122)
2-Fluorobiphenyl	83	(34 - 115)
2,4,6-Tribromophenol	90	(33 - 130)
Terphenyl-d14	92	(28 - 132)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 **Work Order #...:** E3QJP1AA **Matrix.....:** SOLID
LCS Lot-Sample#: H2F260000-374
Prep Date.....: 06/26/02 **Analysis Date..:** 07/01/02
Prep Batch #...: 2177374
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	METHOD
o-Cresol	**0.500**	**0.383**	**mg/L**	**77**	**SW846 8270C**
m-Cresol & p-Cresol	**1.00**	**0.797**	**mg/L**	**80**	**SW846 8270C**
1,4-Dichlorobenzene	**0.500**	**0.414**	**mg/L**	**83**	**SW846 8270C**
2,4-Dinitrotoluene	**0.500**	**0.474**	**mg/L**	**95**	**SW846 8270C**
Hexachlorobenzene	**0.500**	**0.442**	**mg/L**	**88**	**SW846 8270C**
Hexachlorobutadiene	**0.500**	**0.385**	**mg/L**	**77**	**SW846 8270C**
Hexachloroethane	**0.500**	**0.407**	**mg/L**	**81**	**SW846 8270C**
Nitrobenzene	**0.500**	**0.458**	**mg/L**	**92**	**SW846 8270C**
Pentachlorophenol	**0.500**	**0.477**	**mg/L**	**95**	**SW846 8270C**
Pyridine	**0.500**	**0.339**	**mg/L**	**68**	**SW846 8270C**
2,4,5-Trichloro-phenol	**0.500**	**0.387**	**mg/L**	**77**	**SW846 8270C**
2,4,6-Trichloro-phenol	**0.500**	**0.384**	**mg/L**	**77**	**SW846 8270C**

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	59	(19 - 100)
Phenol-d5	75	(15 - 124)
Nitrobenzene-d5	86	(35 - 122)
2-Fluorobiphenyl	83	(34 - 115)
2,4,6-Tribromophenol	90	(33 - 130)
Terphenyl-d14	92	(28 - 132)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

METHOD BLANK REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 **Work Order #...:** E4EGL1AA **Matrix.....:** SOLID
MB Lot-Sample #: H2G090000-331

Prep Date.....: 07/09/02
Analysis Date..: 07/15/02 **Prep Batch #...:** 2190331
Dilution Factor: 1

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD
o-Cresol	ND	0.050	mg/L	SW846 8270C
m-Cresol & p-Cresol	ND	0.10	mg/L	SW846 8270C
1,4-Dichlorobenzene	ND	0.050	mg/L	SW846 8270C
2,4-Dinitrotoluene	ND	0.050	mg/L	SW846 8270C
Hexachlorobenzene	ND	0.050	mg/L	SW846 8270C
Hexachlorobutadiene	ND	0.050	mg/L	SW846 8270C
Hexachloroethane	ND	0.050	mg/L	SW846 8270C
Nitrobenzene	ND	0.050	mg/L	SW846 8270C
Pentachlorophenol	ND	0.25	mg/L	SW846 8270C
Pyridine	ND	0.10	mg/L	SW846 8270C
2,4,5-Trichloro-phenol	ND	0.050	mg/L	SW846 8270C
2,4,6-Trichloro-phenol	ND	0.050	mg/L	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	75	(19 - 100)
Phenol-d5	87	(15 - 124)
Nitrobenzene-d5	89	(35 - 122)
2-Fluorobiphenyl	87	(34 - 115)
2,4,6-Tribromophenol	84	(33 - 130)
Terphenyl-d14	98	(28 - 132)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 Work Order #...: E4EGL1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: H2G090000-331 E4EGL1AD-LCSD
Prep Date.....: 07/09/02 Analysis Date..: 07/15/02
Prep Batch #...: 2190331
Dilution Factor: 1

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	RPD	RPD LIMITS	METHOD
o-Cresol	88	(34 - 118)			SW846 8270C
	93	(34 - 118)	5.5	(0-24)	SW846 8270C
m-Cresol & p-Cresol	93	(29 - 134)			SW846 8270C
	97	(29 - 134)	4.3	(0-32)	SW846 8270C
1,4-Dichlorobenzene	88	(34 - 104)			SW846 8270C
	90	(34 - 104)	2.2	(0-30)	SW846 8270C
2,4-Dinitrotoluene	99	(47 - 122)			SW846 8270C
	100	(47 - 122)	1.2	(0-34)	SW846 8270C
Hexachlorobenzene	91	(42 - 139)			SW846 8270C
	90	(42 - 139)	1.5	(0-34)	SW846 8270C
Hexachlorobutadiene	78	(28 - 105)			SW846 8270C
	78	(28 - 105)	0.25	(0-39)	SW846 8270C
Hexachloroethane	92	(24 - 103)			SW846 8270C
	93	(24 - 103)	1.3	(0-37)	SW846 8270C
Nitrobenzene	97	(30 - 135)			SW846 8270C
	99	(30 - 135)	2.0	(0-27)	SW846 8270C
Pentachlorophenol	84	(29 - 124)			SW846 8270C
	86	(29 - 124)	2.8	(0-31)	SW846 8270C
Pyridine	77	(10 - 128)			SW846 8270C
	65	(10 - 128)	17	(0-28)	SW846 8270C
2,4,5-Trichloro-phenol	91	(43 - 124)			SW846 8270C
	93	(43 - 124)	2.4	(0-31)	SW846 8270C
2,4,6-Trichloro-phenol	91	(42 - 114)			SW846 8270C
	93	(42 - 114)	2.0	(0-27)	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	85	(19 - 100)
	91	(19 - 100)
Phenol-d5	96	(15 - 124)
	101	(15 - 124)
Nitrobenzene-d5	96	(35 - 122)
	99	(35 - 122)
2-Fluorobiphenyl	90	(34 - 115)
	92	(34 - 115)
2,4,6-Tribromophenol	102	(33 - 130)

(Continued on next page)

LABORATORY CONTROL SAMPLE EVALUATION REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 **Work Order #...:** E4EGL1AC-LCS **Matrix.....:** SOLID
LCS Lot-Sample#: H2G090000-331 E4EGL1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	105	(33 - 130)
Terphenyl-d14	98	(28 - 132)
	98	(28 - 132)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 Work Order #...: E4EGL1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: H2G090000-331 E4EGL1AD-LCSD
Prep Date.....: 07/09/02 Analysis Date..: 07/15/02
Prep Batch #...: 2190331
Dilution Factor: 1

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCENT RECOVERY	RPD	METHOD
o-Cresol	0.500	0.438	mg/L	88		SW846 8270C
	0.500	0.463	mg/L	93	5.5	SW846 8270C
m-Cresol & p-Cresol	1.00	0.927	mg/L	93		SW846 8270C
	1.00	0.968	mg/L	97	4.3	SW846 8270C
1,4-Dichlorobenzene	0.500	0.438	mg/L	88		SW846 8270C
	0.500	0.448	mg/L	90	2.2	SW846 8270C
2,4-Dinitrotoluene	0.500	0.494	mg/L	99		SW846 8270C
	0.500	0.500	mg/L	100	1.2	SW846 8270C
Hexachlorobenzene	0.500	0.456	mg/L	91		SW846 8270C
	0.500	0.449	mg/L	90	1.5	SW846 8270C
Hexachlorobutadiene	0.500	0.392	mg/L	78		SW846 8270C
	0.500	0.391	mg/L	78	0.25	SW846 8270C
Hexachloroethane	0.500	0.458	mg/L	92		SW846 8270C
	0.500	0.464	mg/L	93	1.3	SW846 8270C
Nitrobenzene	0.500	0.485	mg/L	97		SW846 8270C
	0.500	0.495	mg/L	99	2.0	SW846 8270C
Pentachlorophenol	0.500	0.420	mg/L	84		SW846 8270C
	0.500	0.432	mg/L	86	2.8	SW846 8270C
Pyridine	0.500	0.384	mg/L	77		SW846 8270C
	0.500	0.325	mg/L	65	17	SW846 8270C
2,4,5-Trichlorophenol	0.500	0.456	mg/L	91		SW846 8270C
	0.500	0.467	mg/L	93	2.4	SW846 8270C
2,4,6-Trichlorophenol	0.500	0.455	mg/L	91		SW846 8270C
	0.500	0.464	mg/L	93	2.0	SW846 8270C

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
2-Fluorophenol	85	(19 - 100)
	91	(19 - 100)
Phenol-d5	96	(15 - 124)
	101	(15 - 124)
Nitrobenzene-d5	96	(35 - 122)
	99	(35 - 122)
2-Fluorobiphenyl	90	(34 - 115)
	92	(34 - 115)
2,4,6-Tribromophenol	102	(33 - 130)

(Continued on next page)

LABORATORY CONTROL SAMPLE DATA REPORT

GC/MS Semivolatiles

Client Lot #...: H2F190244 Work Order #...: E4EGL1AC-LCS Matrix.....: SOLID
LCS Lot-Sample#: H2G090000-331 E4EGL1AD-LCSD

SURROGATE	PERCENT RECOVERY	RECOVERY LIMITS
	105	(33 - 130)
Terphenyl-d14	98	(28 - 132)
	98	(28 - 132)

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Bold print denotes control parameters

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71071

TCLP Metals

Lot-Sample #...: H2F190244-001 **Matrix.....:** SOLID
Date Sampled...: 06/14/02 **Date Received..:** 06/19/02
Leach Date.....: 06/24/02 **Leach Batch #..:** P217502

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2175168						
Mercury	ND	0.0020	mg/L	SW846 7470A	06/25/02	E3A3L1AL
		Dilution Factor: 1		Analysis Time..: 15:02		
Prep Batch #...: 2176179						
Arsenic	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AD
		Dilution Factor: 1		Analysis Time..: 15:12		
Barium	ND	10.0	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AE
		Dilution Factor: 1		Analysis Time..: 15:12		
Cadmium	ND	0.10	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AF
		Dilution Factor: 1		Analysis Time..: 15:12		
Chromium	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AG
		Dilution Factor: 1		Analysis Time..: 15:12		
Lead	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AH
		Dilution Factor: 1		Analysis Time..: 15:12		
Selenium	ND	0.25	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AJ
		Dilution Factor: 1		Analysis Time..: 15:12		
Silver	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3L1AK
		Dilution Factor: 1		Analysis Time..: 15:12		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

TELEDYNE BROWN ENGINEERING

Client Sample ID: 71072

TCLP Metals

Lot-Sample #...: H2F190244-002 **Matrix.....:** SOLID
Date Sampled...: 06/14/02 **Date Received..:** 06/19/02
Leach Date.....: 06/24/02 **Leach Batch #..:** P217502

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2175168						
Mercury	ND	0.0020	mg/L	SW846 7470A	06/25/02	E3A3N1AL
		Dilution Factor: 1		Analysis Time..: 15:08		
Prep Batch #...: 2176179						
Arsenic	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AD
		Dilution Factor: 1		Analysis Time..: 15:16		
Barium	ND	10.0	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AE
		Dilution Factor: 1		Analysis Time..: 15:16		
Cadmium	ND	0.10	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AF
		Dilution Factor: 1		Analysis Time..: 15:16		
Chromium	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AG
		Dilution Factor: 1		Analysis Time..: 15:16		
Lead	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AH
		Dilution Factor: 1		Analysis Time..: 15:16		
Selenium	ND	0.25	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AJ
		Dilution Factor: 1		Analysis Time..: 15:16		
Silver	ND	0.50	mg/L	SW846 6010B	06/25-06/27/02	E3A3N1AK
		Dilution Factor: 1		Analysis Time..: 15:16		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: H2F190244 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: H2F240000-138 Prep Batch #...: 2176179						
Leach Date.....: 06/24/02 Leach Batch #..: P217502						
Arsenic	ND	0.50	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AA
		Dilution Factor: 1				
		Analysis Time..: 13:52				
Barium	ND	10.0	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AC
		Dilution Factor: 1				
		Analysis Time..: 13:52				
Cadmium	ND	0.10	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AD
		Dilution Factor: 1				
		Analysis Time..: 13:52				
Chromium	ND	0.50	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AE
		Dilution Factor: 1				
		Analysis Time..: 13:52				
Lead	ND	0.50	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AF
		Dilution Factor: 1				
		Analysis Time..: 13:52				
Selenium	ND	0.25	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AG
		Dilution Factor: 1				
		Analysis Time..: 13:52				
Silver	ND	0.50	mg/L	SW846 6010B	06/25-06/26/02	E3KD11AH
		Dilution Factor: 1				
		Analysis Time..: 13:52				
MB Lot-Sample #: H2F240000-138 Prep Batch #...: 2175168						
Leach Date.....: 06/24/02 Leach Batch #..: P217502						
Mercury	ND	0.0020	mg/L	SW846 7470A	06/25/02	E3KD11AJ
		Dilution Factor: 1				
		Analysis Time..: 14:55				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: H2F190244 Matrix.....: SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: H2F240000-168 **Prep Batch #...:** 2175168					
Mercury	99	(80 - 120)	SW846 7470A Dilution Factor: 1 Analysis Time..: 14:57	06/25/02	E3KE31AA
LCS Lot-Sample#: H2F250000-179 **Prep Batch #...:** 2176179					
Arsenic	106	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AA
Barium	103	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AC
Cadmium	106	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AD
Chromium	101	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AE
Lead	105	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AF
Selenium	104	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AG
Silver	100	(80 - 120)	SW846 6010B Dilution Factor: 10 Analysis Time..: 13:56	06/25-06/26/02	E3LTK1AH

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: H2F190244 Matrix.....: SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: H2F240000-168 Prep Batch #...: 2175168							
Mercury	0.00500	0.00494	mg/L	99	SW846 7470A	06/25/02	E3KE31AA
			Dilution Factor: 1				
			Analysis Time..: 14:57				
LCS Lot-Sample#: H2F250000-179 Prep Batch #...: 2176179							
Arsenic	5.00	5.29	mg/L	106	SW846 6010B	06/25-06/26/02	E3LTK1AA
			Dilution Factor: 10				
			Analysis Time..: 13:56				
Barium	50.0	51.3	mg/L	103	SW846 6010B	06/25-06/26/02	E3LTK1AC
			Dilution Factor: 10				
			Analysis Time..: 13:56				
Cadmium	1.00	1.06	mg/L	106	SW846 6010B	06/25-06/26/02	E3LTK1AD
			Dilution Factor: 10				
			Analysis Time..: 13:56				
Chromium	5.00	5.06	mg/L	101	SW846 6010B	06/25-06/26/02	E3LTK1AE
			Dilution Factor: 10				
			Analysis Time..: 13:56				
Lead	5.00	5.26	mg/L	105	SW846 6010B	06/25-06/26/02	E3LTK1AF
			Dilution Factor: 10				
			Analysis Time..: 13:56				
Selenium	1.00	1.04	mg/L	104	SW846 6010B	06/25-06/26/02	E3LTK1AG
			Dilution Factor: 10				
			Analysis Time..: 13:56				
Silver	1.00	0.996	mg/L	100	SW846 6010B	06/25-06/26/02	E3LTK1AH
			Dilution Factor: 10				
			Analysis Time..: 13:56				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

Appendix B
Contractor
Analytical Data

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

US Ecology
109 Flint Road
Oak Ridge TN 37830
Attn: Darrel Ray

Report of Analysis/Certificate of Conformance

10/22/02

LIMS #: L19308
Project ID#: US607-3EREGFS-02
Received: 10/4/02
Delivery Date: 10/19/02
P.O. # : 1099
Release #: FS-MO-02-06
SDG #: N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
HEM-8-3FT	L19308-1	80701
HEM-4-3FT	L19308-2	80702
HEM-6-3FT	L19308-3	80703
HEM-5-3FT	L19308-4	80704

TELEDYNE BROWN ENGINEERING

Client Sample ID: 80701

TCLP Metals

Lot-Sample #...: H2J080251-001 Matrix.....: SOLID
Date Sampled...: 09/22/02 Date Received..: 10/08/02
Leach Date.....: 10/14/02 Leach Batch #..: P228702

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2288367						
Arsenic	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K051AA
		Dilution Factor: 1		Analysis Time..: 11:09		
Barium	ND	10.0	mg/L	SW846 6010B	10/16-10/17/02	E9K051AC
		Dilution Factor: 1		Analysis Time..: 11:09		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/16-10/17/02	E9K051AD
		Dilution Factor: 1		Analysis Time..: 11:09		
Chromium	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K051AE
		Dilution Factor: 1		Analysis Time..: 11:09		
Lead	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K051AF
		Dilution Factor: 1		Analysis Time..: 11:09		
Selenium	ND	0.25	mg/L	SW846 6010B	10/16-10/17/02	E9K051AG
		Dilution Factor: 1		Analysis Time..: 11:09		
Silver	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K051AH
		Dilution Factor: 1		Analysis Time..: 11:09		
Prep Batch #...: 2290257						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17/02	E9K051AJ
		Dilution Factor: 1		Analysis Time..: 15:21		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

TELEDYNE BROWN ENGINEERING

Client Sample ID: 80702

TCLP Metals

Lot-Sample #...: H2J080251-002 Matrix.....: SOLID
Date Sampled...: 09/22/02 Date Received..: 10/08/02
Leach Date.....: 10/14/02 Leach Batch #..: P228702

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2288367						
Arsenic	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AA
		Dilution Factor: 1		Analysis Time..: 11:27		
Barium	ND	10.0	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AC
		Dilution Factor: 1		Analysis Time..: 11:27		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AD
		Dilution Factor: 1		Analysis Time..: 11:27		
Chromium	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AE
		Dilution Factor: 1		Analysis Time..: 11:27		
Lead	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AF
		Dilution Factor: 1		Analysis Time..: 11:27		
Selenium	ND	0.25	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AG
		Dilution Factor: 1		Analysis Time..: 11:27		
Silver	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1A1AH
		Dilution Factor: 1		Analysis Time..: 11:27		
Prep Batch #...: 2290257						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17/02	E9K1A1AJ
		Dilution Factor: 1		Analysis Time..: 15:23		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

TELEDYNE BROWN ENGINEERING

Client Sample ID: 80703

TCLP Metals

Lot-Sample #...: H2J080251-003 Matrix.....: SOLID
Date Sampled...: 09/22/02 Date Received..: 10/08/02
Leach Date.....: 10/14/02 Leach Batch #..: P228702

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2288367						
Arsenic	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AA
		Dilution Factor: 1		Analysis Time..: 11:31		
Barium	ND	10.0	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AC
		Dilution Factor: 1		Analysis Time..: 11:31		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AD
		Dilution Factor: 1		Analysis Time..: 11:31		
Chromium	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AE
		Dilution Factor: 1		Analysis Time..: 11:31		
Lead	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AF
		Dilution Factor: 1		Analysis Time..: 11:31		
Selenium	ND	0.25	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AG
		Dilution Factor: 1		Analysis Time..: 11:31		
Silver	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1C1AH
		Dilution Factor: 1		Analysis Time..: 11:31		
Prep Batch #...: 2290257						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17/02	E9K1C1AJ
		Dilution Factor: 1		Analysis Time..: 15:29		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

TELEDYNE BROWN ENGINEERING

Client Sample ID: 80704

TCLP Metals

Lot-Sample #...: H2J080251-004 Matrix.....: SOLID
Date Sampled...: 09/22/02 Date Received..: 10/08/02
Leach Date.....: 10/14/02 Leach Batch #..: P228702

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
Prep Batch #...: 2288367						
Arsenic	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AA
		Dilution Factor: 1		Analysis Time..: 11:36		
Barium	ND	10.0	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AC
		Dilution Factor: 1		Analysis Time..: 11:36		
Cadmium	ND	0.10	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AD
		Dilution Factor: 1		Analysis Time..: 11:36		
Chromium	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AE
		Dilution Factor: 1		Analysis Time..: 11:36		
Lead	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AF
		Dilution Factor: 1		Analysis Time..: 11:36		
Selenium	ND	0.25	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AG
		Dilution Factor: 1		Analysis Time..: 11:36		
Silver	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E9K1D1AH
		Dilution Factor: 1		Analysis Time..: 11:36		
Prep Batch #...: 2290257						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17/02	E9K1D1AJ
		Dilution Factor: 1		Analysis Time..: 15:31		

NOTE(S):

Analysis performed in accordance with USEPA Toxicity Characteristic Leaching Procedure Method 1311

METHOD BLANK REPORT

TCLP Metals

Client Lot #...: H2J080251 Matrix.....: SOLID

PARAMETER	RESULT	REPORTING LIMIT	UNITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
MB Lot-Sample #: H2J140000-133 Prep Batch #...: 2288367						
Leach Date.....: 10/14/02 Leach Batch #..: P228702						
Arsenic	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AA
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Barium	ND	10.0	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AC
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Cadmium	ND	0.10	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AD
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Chromium	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AE
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Lead	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AF
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Selenium	ND	0.25	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AG
		Dilution Factor: 1				
		Analysis Time..: 11:00				
Silver	ND	0.50	mg/L	SW846 6010B	10/16-10/17/02	E90AW1AH
		Dilution Factor: 1				
		Analysis Time..: 11:00				
MB Lot-Sample #: H2J140000-133 Prep Batch #...: 2290257						
Leach Date.....: 10/14/02 Leach Batch #..: P228702						
Mercury	ND	0.0020	mg/L	SW846 7470A	10/17/02	E90AW1AJ
		Dilution Factor: 1				
		Analysis Time..: 15:17				

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE EVALUATION REPORT

TCLP Metals

Client Lot #...: H2J080251 **Matrix.....:** SOLID

PARAMETER	PERCENT RECOVERY	RECOVERY LIMITS	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: H2J150000-367 **Prep Batch #...:** 2288367					
Arsenic	97	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AA
		Dilution Factor: 10	Analysis Time..: 11:05		
Barium	93	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AC
		Dilution Factor: 10	Analysis Time..: 11:05		
Cadmium	97	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AD
		Dilution Factor: 10	Analysis Time..: 11:05		
Chromium	96	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AE
		Dilution Factor: 10	Analysis Time..: 11:05		
Lead	98	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AF
		Dilution Factor: 10	Analysis Time..: 11:05		
Selenium	95	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AG
		Dilution Factor: 10	Analysis Time..: 11:05		
Silver	93	(80 - 120)	SW846 6010B	10/16-10/17/02	E925T1AH
		Dilution Factor: 10	Analysis Time..: 11:05		
LCS Lot-Sample#: H2J170000-257 **Prep Batch #...:** 2290257					
Mercury	100	(80 - 120)	SW846 7470A	10/17/02	E97A71AA
		Dilution Factor: 1	Analysis Time..: 15:19		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

LABORATORY CONTROL SAMPLE DATA REPORT

TCLP Metals

Client Lot #...: H2J080251 **Matrix.....:** SOLID

PARAMETER	SPIKE AMOUNT	MEASURED AMOUNT	UNITS	PERCNT RECVRY	METHOD	PREPARATION-ANALYSIS DATE	WORK ORDER #
LCS Lot-Sample#: H2J150000-367 **Prep Batch #...:** 2288367							
Arsenic	5.00	4.83	mg/L	97	SW846 6010B	10/16-10/17/02	E925T1AA
			Dilution Factor: 10		Analysis Time..: 11:05		
Barium	50.0	46.7	mg/L	93	SW846 6010B	10/16-10/17/02	E925T1AC
			Dilution Factor: 10		Analysis Time..: 11:05		
Cadmium	1.00	0.973	mg/L	97	SW846 6010B	10/16-10/17/02	E925T1AD
			Dilution Factor: 10		Analysis Time..: 11:05		
Chromium	5.00	4.80	mg/L	96	SW846 6010B	10/16-10/17/02	E925T1AE
			Dilution Factor: 10		Analysis Time..: 11:05		
Lead	5.00	4.88	mg/L	98	SW846 6010B	10/16-10/17/02	E925T1AF
			Dilution Factor: 10		Analysis Time..: 11:05		
Selenium	1.00	0.954	mg/L	95	SW846 6010B	10/16-10/17/02	E925T1AG
			Dilution Factor: 10		Analysis Time..: 11:05		
Silver	1.00	0.934	mg/L	93	SW846 6010B	10/16-10/17/02	E925T1AH
			Dilution Factor: 10		Analysis Time..: 11:05		
LCS Lot-Sample#: H2J170000-257 **Prep Batch #...:** 2290257							
Mercury	0.00500	0.00502	mg/L	100	SW846 7470A	10/17/02	E97A71AA
			Dilution Factor: 1		Analysis Time..: 15:19		

NOTE(S):

Calculations are performed before rounding to avoid round-off errors in calculated results.

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

US Ecology
109 Flint Road
Oak Ridge TN 37830
Attn: Darrel Ray

Report of Analysis/Certificate of Conformance

11/20/02

LIMS #:	L19691
Project ID#:	US607-3EREGFS-02
Received:	11/12/02
Delivery Date:	11/15/02
P.O. # :	1099
Release #:	FS-MO-02-06
SDG #:	N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

Cross Reference Table

Client ID	Laboratory ID	TI#
HEM 1 1FT.	L19691-1	83290
HEM 1 2FT.	L19691-2	83291
HEM 1 3FT.	L19691-3	83292
HEM 2 1FT.	L19691-4	83293
HEM 2 2FT.	L19691-5	83294
HEM 2 3FT.	L19691-6	83295
HEM 3 1FT.	L19691-7	83296
HEM 3 3FT.	L19691-8	83297
HEM 3 5FT.	L19691-9	83298
HEM 4 1FT.	L19691-10	83299
HEM 4 2FT.	L19691-11	83300
HEM 4 3FT.	L19691-12	83301
HEM 5 1FT.	L19691-13	83302
HEM 5 2FT.	L19691-14	83303
HEM 5 3FT.	L19691-15	83304
HEM 6 1FT.	L19691-16	83305
HEM 6 2FT.	L19691-17	83306
HEM 6 3FT.	L19691-18	83307
HEM 7 1FT.	L19691-19	83308
HEM 7 2FT.	L19691-20	83309
HEM 7 3FT.	L19691-21	83310
HEM 8 1FT.	L19691-22	83311
HEM 8 2FT.	L19691-23	83312
HEM 8 3FT.	L19691-24	83313
HEM 9 1FT.	L19691-25	83314
HEM 9 2FT.	L19691-26	83315
HEM 9 3FT.	L19691-27	83316
HEM 10 1FT.	L19691-28	83317
HEM 10 2FT.	L19691-29	83318
HEM 10 3FT.	L19691-30	83319
HEM 11 1FT.	L19691-31	83320
HEM 11 2FT.	L19691-32	83321
HEM 11 3FT.	L19691-33	83322
HEM 12 1FT.	L19691-34	83323
HEM 12 2FT.	L19691-35	83324
HEM 12 3FT.	L19691-36	83325

Report of Analysis

11/20/02 10:54:11AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Darrel Ray

Sample ID: **HEM 1 1FT.**
Station:
Description:
LIMS Number: L19691-1 (83290)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.38E+001**	1.11E+000	2.21E-001	pCi/G	303.000	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**9.96E-002**	3.98E-002	1.90E-002	pCi/G	303.000	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	**6.26E-001**	7.21E-002	4.33E-001	pCi/G	303.000	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
TH-232	042-5	**7.17E-001**	6.67E-002	6.25E-002	pCi/G	303.000	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**9.59E-001**	2.46E-001	1.34E-001	pCi/G	303.000	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	3.14E+000	2.61E+000	**3.53E+000**	pCi/G	303.000	G wet	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: **HEM 1 2FT.**
Station:
Description:
LIMS Number: L19691-2 (83291)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.32E+001**	1.33E+000	2.48E-001	pCi/G	312.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	4.28E-002	2.74E-002	**3.67E-002**	pCi/G	312.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	*		No
RA-226	042-5	**8.10E-001**	8.27E-002	6.87E-001	pCi/G	312.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
TH-232	042-5	**7.20E-001**	8.53E-002	7.49E-002	pCi/G	312.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**2.79E+000**	3.41E-001	2.27E-001	pCi/G	312.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	4.77E+000	3.23E+000	**4.54E+000**	pCi/G	312.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bol xt in :s re ble v

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 1 3FT.
Station:
Description:
LIMS Number: L19691-3 (83292)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.33E+001**	1.22E+000	3.82E-001	pCi/G	340.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	5.02E-002	7.12E-002	**5.11E-002**	pCi/G	340.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
RA-226	042-5	6.72E-001	7.45E-002	**1.11E+000**	pCi/G	340.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**6.46E-001**	7.21E-002	1.29E-001	pCi/G	340.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**1.63E+000**	3.20E-001	3.58E-001	pCi/G	340.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	**9.28E+000**	6.01E+000	4.70E+000	pCi/G	340.100	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-233/234 (AS)	062-110	**2.20E+001**	2.90E+000	7.72E-002	pCi/g	0.501	g		11/17/02	60,003	seconds	+		
U-235 (AS)	062-110	**9.48E-001**	2.89E-001	2.74E-002	pCi/g	0.501	g		11/17/02	60,003	seconds	+		
U-238 (AS)	062-110	**3.95E+000**	6.83E-001	5.46E-002	pCi/g	0.501	g		11/17/02	60,003	seconds	+		

Comments:

Sample ID: HEM 2 1FT.
Station:
Description:
LIMS Number: L19691-4 (83293)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.72E+001**	2.02E+000	5.85E-001	pCi/G	253.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	2.73E-002	6.25E-002	**1.07E-001**	pCi/G	253.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	8.09E-001	1.30E-001	**2.02E+000**	pCi/G	253.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**9.28E-001**	1.15E-001	2.72E-001	pCi/G	253.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**3.61E+000**	5.69E-001	6.64E-001	pCi/G	253.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bol[illegible]xt in [illegible]es re[illegible]ble va[illegible]

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 2 1FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | | Received: 11/12/02
LIMS Number: L19691-4 (83293) | US607-3EREGFS-02 | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-238	042-5	3.95E+000	6.47E+000	**1.14E+001**	pCi/G	253.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: **HEM 2 2FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | | Received: 11/12/02
LIMS Number: L19691-5 (83294) | US607-3EREGFS-02 | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.97E+001**	1.70E+000	5.55E-001	pCi/G	259.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	7.33E-002	4.56E-002	**8.59E-002**	pCi/G	259.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	7.88E-001	9.69E-002	**1.27E+000**	pCi/G	259.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**1.10E+000**	1.07E-001	2.05E-001	pCi/G	259.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**1.42E+000**	3.82E-001	4.12E-001	pCi/G	259.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	8.60E+000	5.14E+000	**9.70E+000**	pCi/G	259.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: **HEM 2 3FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | | Received: 11/12/02
LIMS Number: L19691-6 (83295) | US607-3EREGFS-02 | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bold text in results table v

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 2 3FT.
Station:
Description:
LIMS Number: L19691-6 (83295)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.57E+001**	1.40E+000	2.10E-001	pCi/G	300.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**2.19E-001**	7.73E-002	3.44E-002	pCi/G	300.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	6.16E-001	9.78E-002	**8.37E-001**	pCi/G	300.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**7.17E-001**	1.08E-001	9.44E-002	pCi/G	300.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**4.53E+000**	4.98E-001	2.73E-001	pCi/G	300.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	6.64E+000	6.05E+000	**3.21E+000**	pCi/G	300.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes

Comments:

Sample ID: HEM 3 1FT.
Station:
Description:
LIMS Number: L19691-7 (83296)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.71E+001**	1.85E+000	2.53E-001	pCi/G	279.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	7.43E-002	5.76E-002	**9.49E-002**	pCi/G	279.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
RA-226	042-5	8.83E-001	1.21E-001	**1.65E+000**	pCi/G	279.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**9.11E-001**	1.00E-001	1.84E-001	pCi/G	279.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	3.00E-001	3.39E-001	**5.87E-001**	pCi/G	279.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
U-238	042-5	-1.03E+000	5.74E+000	**9.36E+000**	pCi/G	279.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bold text indicates reportable value

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 3 3FT.
Station:
Description:
LIMS Number: L19691-8 (83297)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.66E+001**	1.28E+000	3.95E-001	pCi/G	331.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**1.06E-001**	4.79E-002	5.39E-002	pCi/G	331.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	9.40E-001	7.62E-002	**1.07E+000**	pCi/G	331.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.36E-001**	7.19E-002	1.29E-001	pCi/G	331.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**7.63E-001**	3.15E-001	3.44E-001	pCi/G	331.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	5.36E+000	3.36E+000	**6.35E+000**	pCi/G	331.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: HEM 3 5FT.
Station:
Description:
LIMS Number: L19691-9 (83298)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.56E+001**	1.21E+000	4.28E-001	pCi/G	309.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	-2.90E-003	2.64E-002	**4.76E-002**	pCi/G	309.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	6.21E-001	7.17E-002	**1.05E+000**	pCi/G	309.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.18E-001**	7.83E-002	1.30E-001	pCi/G	309.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**1.58E+000**	2.89E-001	3.37E-001	pCi/G	309.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	-2.00E-001	3.48E+000	**6.31E+000**	pCi/G	309.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bold text in results reported above MDC

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 4 1FT.**
Station:
Description:
LIMS Number: L19691-10 (83299)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.17E+001**	9.31E-001	1.82E-001	pCi/G	352.600	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**8.20E-002**	3.30E-002	1.76E-002	pCi/G	352.600	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	**5.11E-001**	6.12E-002	5.04E-001	pCi/G	352.600	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
TH-232	042-5	**6.15E-001**	6.52E-002	5.29E-002	pCi/G	352.600	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**7.44E+000**	3.54E-001	1.86E-001	pCi/G	352.600	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	7.55E+000	5.67E+000	**2.01E+000**	pCi/G	352.600	G wet	11/12/02 12:00	11/13/02	6,000	Seconds			Yes

Comments:

Sample ID: **HEM 4 2FT.**
Station:
Description:
LIMS Number: L19691-11 (83300)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.58E+001**	1.49E+000	2.00E-001	pCi/G	257.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	4.14E-002	3.40E-002	**4.37E-002**	pCi/G	257.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	6.84E-001	9.81E-002	**8.83E-001**	pCi/G	257.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.50E-001**	1.14E-001	8.49E-002	pCi/G	257.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**4.87E+000**	8.86E-001	6.37E-001	pCi/G	257.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	4.06E+000	3.47E+000	**4.83E+000**	pCi/G	257.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bold text indicates reportable value

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 4 3FT.
Station:
Description:
LIMS Number: L19691-12 (83301)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**7.63E+000**	9.04E-001	2.94E-001	pCi/G	423.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	1.39E-002	2.43E-002	**4.24E-002**	pCi/G	423.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	4.45E-001	6.02E-002	**8.25E-001**	pCi/G	423.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**4.08E-001**	5.40E-002	1.16E-001	pCi/G	423.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**6.81E-001**	3.47E-001	3.41E-001	pCi/G	423.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	5.00E+000	2.93E+000	**5.63E+000**	pCi/G	423.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: HEM 5 1FT.
Station:
Description:
LIMS Number: L19691-13 (83302)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.73E+001**	1.84E+000	6.49E-001	pCi/G	261.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	8.91E-003	6.07E-002	**1.01E-001**	pCi/G	261.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	9.59E-001	1.15E-001	**1.68E+000**	pCi/G	261.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.74E-001**	1.09E-001	2.28E-001	pCi/G	261.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**8.28E-001**	3.98E-001	5.44E-001	pCi/G	261.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	6.96E+000	6.45E+000	**1.18E+001**	pCi/G	261.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 5 2FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | US607-3EREGFS-02 | Received: 11/12/02
LIMS Number: L19691-14 (83303) | | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**9.69E+000**	1.02E+000	4.11E-001	pCi/G	342.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	5.92E-002	3.53E-002	**6.67E-002**	pCi/G	342.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	4.57E-001	6.97E-002	**9.23E-001**	pCi/G	342.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**4.99E-001**	5.92E-002	1.48E-001	pCi/G	342.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**3.92E+000**	3.29E-001	3.68E-001	pCi/G	342.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	9.55E+000	6.59E+000	**4.87E+000**	pCi/G	342.000	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes

Comments:

Sample ID: **HEM 5 3FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | US607-3EREGFS-02 | Received: 11/12/02
LIMS Number: L19691-15 (83304) | | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
SAMPLE		NOT RECEIVED												

Comments:

Sample ID: **HEM 6 1FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | US607-3EREGFS-02 | Received: 11/12/02
LIMS Number: L19691-16 (83305) | | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 6 1FT.
Station:
Description:
LIMS Number: L19691-16 (83305)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.21E+001**	1.36E+000	2.54E-001	pCi/G	272.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	1.63E-002	2.71E-002	**3.50E-002**	pCi/G	272.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	4.96E-001	9.75E-002	**6.77E-001**	pCi/G	272.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**5.86E-001**	1.20E-001	8.21E-002	pCi/G	272.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**6.68E-001**	3.72E-001	2.24E-001	pCi/G	272.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	1.42E+000	3.62E+000	**4.47E+000**	pCi/G	272.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: HEM 6 2FT.
Station:
Description:
LIMS Number: L19691-17 (83306)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.02E+001**	1.35E+000	4.85E-001	pCi/G	269.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**1.15E-001**	6.72E-002	8.24E-002	pCi/G	269.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	7.74E-001	9.94E-002	**1.78E+000**	pCi/G	269.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**5.39E-001**	9.30E-002	1.87E-001	pCi/G	269.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**3.90E+000**	5.71E-001	6.21E-001	pCi/G	269.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	8.45E+000	8.74E+000	**5.53E+000**	pCi/G	269.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 6 3FT.**
Station:
Description:
LIMS Number: L19691-18 (83307)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
SAMPLE		NOT RECEIVED												

Comments:

Sample ID: **HEM 7 1FT.**
Station:
Description:
LIMS Number: L19691-19 (83308)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**9.55E+000**	9.81E-001	3.86E-001	pCi/G	350.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**9.87E-002**	6.16E-002	4.22E-002	pCi/G	350.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	8.07E-001	7.09E-002	**1.16E+000**	pCi/G	350.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**5.86E-001**	6.23E-002	1.36E-001	pCi/G	350.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**3.32E+000**	3.49E-001	3.78E-001	pCi/G	350.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	7.21E+000	5.99E+000	**4.69E+000**	pCi/G	350.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes

Comments:

Sample ID: **HEM 7 2FT.**
Station:
Description:
LIMS Number: L19691-20 (83309)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 7 2FT.**
Station:
Description:
LIMS Number: L19691-20 (83309)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.58E+001**	1.16E+000	3.87E-001	pCi/G	324.900	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**9.30E-002**	3.96E-002	5.53E-002	pCi/G	324.900	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	8.18E-001	7.09E-002	**1.18E+000**	pCi/G	324.900	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.29E-001**	7.90E-002	1.39E-001	pCi/G	324.900	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**3.25E+000**	3.42E-001	3.80E-001	pCi/G	324.900	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	**1.14E+001**	4.64E+000	5.70E+000	pCi/G	324.900	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-233/234 (AS)	062-110	**4.42E+001**	4.03E+000	4.34E-002	pCi/g	0.593	g		11/17/02	60,003	seconds	+		
U-235 (AS)	062-110	**1.59E+000**	2.71E-001	1.26E-002	pCi/g	0.593	g		11/17/02	60,003	seconds	+		
U-238 (AS)	062-110	**6.16E+000**	6.80E-001	4.34E-002	pCi/g	0.593	g		11/17/02	60,003	seconds	+		

Comments:

Sample ID: **HEM 7 3FT.**
Station:
Description:
LIMS Number: L19691-21 (83310)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.71E+001**	1.19E+000	1.79E-001	pCi/G	327.900	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	1.70E-002	2.28E-002	**2.84E-002**	pCi/G	327.900	G wet	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	**5.98E-001**	6.56E-002	4.60E-001	pCi/G	327.900	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
TH-232	042-5	**7.59E-001**	7.16E-002	5.93E-002	pCi/G	327.900	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**1.41E+000**	2.47E-001	1.27E-001	pCi/G	327.900	G wet	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 7 3FT.
Station:
Description:
LIMS Number: L19691-21 (83310)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-238	042-5	3.92E+000	2.62E+000	**3.58E+000**	pCi/G	327.900	G wet	11/12/02 12:00	11/13/02	6,000	Seconds			No
U-233/234 (AS)	062-110	**4.18E+001**	4.62E+000	9.37E-002	pCi/g	0.555	g		11/17/02	60,004	seconds	+		
U-235 (AS)	062-110	**1.46E+000**	3.18E-001	6.68E-002	pCi/g	0.555	g		11/17/02	60,004	seconds	+		
U-238 (AS)	062-110	**4.87E+000**	6.87E-001	6.62E-002	pCi/g	0.555	g		11/17/02	60,004	seconds	+		

Comments:

Sample ID: HEM 8 1FT.
Station:
Description:
LIMS Number: L19691-22 (83311)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.63E+001**	1.50E+000	3.10E-001	pCi/G	275.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	3.92E-002	3.65E-002	**4.54E-002**	pCi/G	275.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	6.96E-001	9.02E-002	**7.76E-001**	pCi/G	275.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**7.40E-001**	8.24E-002	9.32E-002	pCi/G	275.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**2.82E+000**	4.15E-001	2.39E-001	pCi/G	275.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	2.47E+000	3.93E+000	**5.08E+000**	pCi/G	275.500	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 8 2FT.**
Station:
Description:
LIMS Number: L19691-23 (83312)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.76E+001**	1.52E+000	4.87E-001	pCi/G	308.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	-2.64E-002	3.85E-002	**5.96E-002**	pCi/G	308.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	7.06E-001	8.62E-002	**1.25E+000**	pCi/G	308.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**1.00E+000**	8.65E-002	1.94E-001	pCi/G	308.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**8.60E-001**	3.55E-001	3.67E-001	pCi/G	308.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	3.88E+000	4.14E+000	**7.39E+000**	pCi/G	308.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
U-233/234 (AS)	062-110	**1.43E+001**	1.85E+000	2.00E-002	pCi/g	0.508	g		11/17/02	60,001	seconds	+		
U-235 (AS)	062-110	**5.03E-001**	1.92E-001	2.47E-002	pCi/g	0.508	g		11/17/02	60,001	seconds	+		
U-238 (AS)	062-110	**1.75E+000**	3.67E-001	2.00E-002	pCi/g	0.508	g		11/17/02	60,001	seconds	+		

Comments:

Sample ID: **HEM 8 3FT.**
Station:
Description:
LIMS Number: L19691-24 (83313)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.89E+001**	1.95E+000	6.97E-001	pCi/G	268.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	2.01E-002	5.54E-002	**9.43E-002**	pCi/G	268.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	8.29E-001	1.24E-001	**1.59E+000**	pCi/G	268.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**9.69E-001**	1.15E-001	2.35E-001	pCi/G	268.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**1.15E+000**	6.44E-001	5.00E-001	pCi/G	268.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 8 3FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | | Received: 11/12/02
LIMS Number: L19691-24 (83313) | US607-3EREGFS-02 | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-238	042-5	-9.00E-001	5.79E+000	**9.47E+000**	pCi/G	268.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: **HEM 9 1FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | | Received: 11/12/02
LIMS Number: L19691-25 (83314) | US607-3EREGFS-02 | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.11E+001**	1.04E+000	3.97E-001	pCi/G	354.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**8.41E-002**	4.73E-002	4.96E-002	pCi/G	354.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	7.63E-001	7.62E-002	**1.27E+000**	pCi/G	354.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**5.46E-001**	7.41E-002	1.48E-001	pCi/G	354.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**6.31E+000**	4.16E-001	4.36E-001	pCi/G	354.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	**3.05E+001**	6.87E+000	5.22E+000	pCi/G	354.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Comments:

Sample ID: **HEM 9 2FT.** | **L19691** | Collect Start: 11/12/02 0:00
Station: | US Ecology | Collect Stop:
Description: | | Received: 11/12/02
LIMS Number: L19691-26 (83315) | US607-3EREGFS-02 | Matrix: Solids (SD)
% Moisture: | | Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 9 2FT.
Station:
Description:
LIMS Number: L19691-26 (83315)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**9.84E+000**	1.21E+000	2.91E-001	pCi/G	336.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	2.41E-002	3.08E-002	**3.95E-002**	pCi/G	336.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	7.72E-001	9.53E-002	**7.90E-001**	pCi/G	336.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**5.07E-001**	8.24E-002	7.84E-002	pCi/G	336.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**6.47E+000**	4.83E-001	2.85E-001	pCi/G	336.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	**3.35E+001**	7.85E+000	2.53E+000	pCi/G	336.300	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Comments:

Sample ID: HEM 9 3FT.
Station:
Description:
LIMS Number: L19691-27 (83316)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.55E+001**	1.75E+000	6.02E-001	pCi/G	343.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	1.96E-003	4.61E-002	**7.60E-002**	pCi/G	343.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	9.56E-001	1.04E-001	**1.47E+000**	pCi/G	343.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.17E-001**	8.99E-002	1.83E-001	pCi/G	343.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**6.72E-001**	4.00E-001	4.79E-001	pCi/G	343.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	3.75E+000	6.21E+000	**6.21E+000**	pCi/G	343.400	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

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Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 10 1FT.**
Station:
Description:
LIMS Number: L19691-28 (83317)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**2.42E+000**	5.16E-001	2.51E-001	pCi/G	344.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	-1.34E-003	2.08E-002	**3.44E-002**	pCi/G	344.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	2.21E-001	5.02E-002	**8.11E-001**	pCi/G	344.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**1.21E-001**	4.46E-002	8.61E-002	pCi/G	344.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**5.86E-001**	2.20E-001	2.70E-001	pCi/G	344.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	6.41E-001	2.32E+000	**3.90E+000**	pCi/G	344.600	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
U-233/234 (AS)	062-110	**5.51E+001**	9.85E+000	3.22E-002	pCi/g	0.528	g		11/17/02	60,004	seconds	+		
U-235 (AS)	062-110	**2.02E+000**	4.64E-001	1.62E-002	pCi/g	0.528	g		11/17/02	60,004	seconds	+		
U-238 (AS)	062-110	**3.64E+000**	7.38E-001	3.22E-002	pCi/g	0.528	g		11/17/02	60,004	seconds	+		

Comments:

Sample ID: **HEM 10 2FT.**
Station:
Description:
LIMS Number: L19691-29 (83318)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**6.68E+000**	8.39E-001	3.79E-001	pCi/G	318.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**1.18E-001**	4.87E-002	4.03E-002	pCi/G	318.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	3.63E-001	6.01E-002	**1.04E+000**	pCi/G	318.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**4.25E-001**	5.30E-002	1.10E-001	pCi/G	318.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**2.59E+000**	2.78E-001	3.31E-001	pCi/G	318.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 10 2FT.**
Station:
Description:
LIMS Number: L19691-29 (83318)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-238	042-5	**9.09E+000**	4.60E+000	4.89E+000	pCi/G	318.800	G WET	11/12/02 12:00	11/13/02	6.000	Seconds	+		Yes

Comments:

Sample ID: **HEM 10 3FT.**
Station:
Description:
LIMS Number: L19691-30 (83319)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.07E+001**	1.07E+000	2.12E-001	pCi/G	314.900	G wet	11/12/02 12:00	11/13/02	6.000	Seconds	+		Yes
CS-137	042-5	6.50E-002	5.25E-002	**2.05E-002**	pCi/G	314.900	G wet	11/12/02 12:00	11/13/02	6.000	Seconds			Yes
RA-226	042-5	4.66E-001	5.94E-002	**4.75E-001**	pCi/G	314.900	G wet	11/12/02 12:00	11/13/02	6.000	Seconds			Yes
TH-232	042-5	**5.08E-001**	6.16E-002	5.47E-002	pCi/G	314.900	G wet	11/12/02 12:00	11/13/02	6.000	Seconds	+		Yes
U-235	042-5	**2.00E+000**	2.88E-001	1.43E-001	pCi/G	314.900	G wet	11/12/02 12:00	11/13/02	6.000	Seconds	+		Yes
U-238	042-5	5.68E+000	4.34E+000	**2.35E+000**	pCi/G	314.900	G wet	11/12/02 12:00	11/13/02	6.000	Seconds			Yes

Comments:

Sample ID: **HEM 11 1FT.**
Station:
Description:
LIMS Number: L19691-31 (83320)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 11 1FT.**
Station:
Description:
LIMS Number: L19691-31 (83320)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.68E+001**	1.35E+000	1.75E-001	pCi/G	329.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	6.98E-002	3.12E-002	**4.29E-002**	pCi/G	329.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	*		No
RA-226	042-5	**6.52E-001**	8.10E-002	5.36E-001	pCi/G	329.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
TH-232	042-5	**8.06E-001**	7.55E-002	6.93E-002	pCi/G	329.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**6.26E-001**	3.07E-001	1.93E-001	pCi/G	329.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	2.21E+000	2.78E+000	**3.71E+000**	pCi/G	329.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: **HEM 11 2FT.**
Station:
Description:
LIMS Number: L19691-32 (83321)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.64E+001**	1.42E+000	4.10E-001	pCi/G	329.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	1.21E-002	3.94E-002	**6.65E-002**	pCi/G	329.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
RA-226	042-5	6.98E-001	8.75E-002	**1.06E+000**	pCi/G	329.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**9.56E-001**	8.62E-002	1.41E-001	pCi/G	329.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	7.24E-001	6.11E-001	**4.51E-001**	pCi/G	329.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
U-238	042-5	2.69E+000	4.03E+000	**6.98E+000**	pCi/G	329.700	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 11 3FT.**
Station:
Description:
LIMS Number: L19691-33 (83322)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.39E+001**	1.52E+000	4.66E-001	pCi/G	367.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	5.00E-002	5.70E-002	**7.50E-002**	pCi/G	367.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
RA-226	042-5	7.15E-001	9.22E-002	**1.32E+000**	pCi/G	367.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**7.45E-001**	8.44E-002	1.73E-001	pCi/G	367.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**1.93E+000**	5.50E-001	6.69E-001	pCi/G	367.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	5.55E+000	5.45E+000	**9.81E+000**	pCi/G	367.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No
U-233/234 (AS)	062-110	**5.51E+001**	6.87E+000	7.14E-002	pCi/g	0.538	g		11/17/02	60,001	seconds	+		
U-235 (AS)	062-110	**2.20E+000**	4.71E-001	2.53E-002	pCi/g	0.538	g		11/17/02	60,001	seconds	+		
U-238 (AS)	062-110	**1.24E+001**	1.71E+000	5.05E-002	pCi/g	0.538	g		11/17/02	60,001	seconds	+		

Comments:

Sample ID: **HEM 12 1FT.**
Station:
Description:
LIMS Number: L19691-34 (83323)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.23E+001**	1.11E+000	3.43E-001	pCi/G	343.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	2.43E-002	4.33E-002	**5.89E-002**	pCi/G	343.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
RA-226	042-5	5.68E-001	7.65E-002	**9.99E-001**	pCi/G	343.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**6.69E-001**	6.76E-002	1.44E-001	pCi/G	343.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**7.45E-001**	2.41E-001	3.29E-001	pCi/G	343.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM 12 1FT.
Station:
Description:
LIMS Number: L19691-34 (83323)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-238	042-5	2.26E+000	3.88E+000	**6.71E+000**	pCi/G	343.200	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: HEM 12 2FT.
Station:
Description:
LIMS Number: L19691-35 (83324)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**1.21E+001**	1.23E+000	3.10E-001	pCi/G	340.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	6.06E-002	5.41E-002	**2.99E-002**	pCi/G	340.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
RA-226	042-5	**6.70E-001**	8.41E-002	6.65E-001	pCi/G	340.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
TH-232	042-5	**6.99E-001**	8.38E-002	8.85E-002	pCi/G	340.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	7.33E-001	5.31E-001	**2.91E-001**	pCi/G	340.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
U-238	042-5	1.99E+000	2.79E+000	**3.59E+000**	pCi/G	340.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			No

Comments:

Sample ID: HEM 12 3FT.
Station:
Description:
LIMS Number: L19691-36 (83325)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

11/20/02 10:54:42AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: **HEM 12 3FT.**
Station:
Description:
LIMS Number: L19691-36 (83325)
% Moisture:

L19691
US Ecology
US607-3EREGFS-02

Collect Start: 11/12/02 0:00
Collect Stop:
Received: 11/12/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
K-40	042-5	**6.36E+000**	7.62E-001	2.71E-001	pCi/G	372.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
CS-137	042-5	**4.83E-002**	3.18E-002	4.55E-002	pCi/G	372.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
RA-226	042-5	3.77E-001	5.13E-002	**1.87E+000**	pCi/G	372.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds			Yes
TH-232	042-5	**8.36E-001**	7.26E-002	9.44E-002	pCi/G	372.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-235	042-5	**2.28E+001**	5.84E-001	6.53E-001	pCi/G	372.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes
U-238	042-5	**9.78E+000**	3.61E+000	4.29E+000	pCi/G	372.800	G WET	11/12/02 12:00	11/13/02	6,000	Seconds	+		Yes

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

TELEDYNE
BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

OCT 17 2002

US Ecology
109 Flint Road
Oak Ridge TN 37830
Attn: Darrel Ray

Report of Analysis/Certificate of Conformance

10/14/02

LIMS #:	L19307
Project ID#:	US607-3EREGFS-02
Received:	10/4/02
Delivery Date:	10/14/02
P.O. # :	1099
Release #:	FS-MO-02-06
SDG #:	N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
HEM-8-3FT	L19307-1	80697
HEM-4-3FT	L19307-2	80698
HEM-6-3FT	L19307-3	80699
HEM-5-3FT	L19307-4	80700

Report of Analysis

10/14/02 7:31:10AM

BROWN ENGINEERING
A Teledyne Technologies Company

arrel Ray

Sample ID: **HEM-8-3FT**
Station:
Description:
LIMS Number: L19307-1 (80697)
% Moisture:

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
-233/234 (AS)	062-110	**1.60E+001**	1.23E+000		pCi/g	0.500	g		10/10/02	60,002	seconds	+		
-235 (AS)	062-110	**4.18E-001**	1.06E-001		pCi/g	0.500	g		10/10/02	60,002	seconds	+		
-238 (AS)	062-110	**1.29E+000**	1.84E-001		pCi/g	0.500	g		10/10/02	60,002	seconds	+		

Comments:

Sample ID: **HEM-4-3FT**
Station:
Description:
LIMS Number: L19307-2 (80698)
% Moisture:

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
J-233/234 (AS)	062-110	**1.42E+001**	1.16E+000		pCi/g	0.500	g		10/10/02	60,003	seconds	+		
J-235 (AS)	062-110	**4.37E-001**	1.14E-001		pCi/g	0.500	g		10/10/02	60,003	seconds	+		
J-238 (AS)	062-110	**2.28E+000**	2.78E-001		pCi/g	0.500	g		10/10/02	60,003	seconds	+		

Comments:

Sample ID: **HEM-6-3FT**
Station:
Description:
LIMS Number: L19307-3 (80699)
% Moisture: 9.17

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
BE-7	042-5	<		**2.07E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
K-40	042-5	**1.04E+001**	4.90E-001		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

Report of Analysis

10/14/02 7:31:27AM

BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-6-3FT
Station:
Description:
IMS Number: L19307-3 (80699)
% Moisture: 9.17

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
R-51	042-5	<		**2.54E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
IN-54	042-5	<		**2.19E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
O-57	042-5	**9.92E-002**	2.51E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
O-58	042-5	<		**2.26E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
E-59	042-5	<		**5.45E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
O-60	042-5	<		**1.74E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
N-65	042-5	<		**4.78E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SE-75	042-5	<		**2.80E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SR-85	042-5	<		**2.86E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
Y-88	042-5	<		**2.00E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-94	042-5	<		**1.94E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-95	042-5	<		**3.62E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
ZR-95	042-5	<		**4.22E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MO-99	042-5	<		**2.58E+000**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-103	042-5	<		**2.52E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-106	042-5	<		**1.83E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CD-109	042-5	<		**9.30E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
AG-110M	042-5	<		**2.08E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SN-113	042-5	<		**2.81E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-124	042-5	<		**2.35E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-125	042-5	<		**5.57E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
TE-129M	042-5	<		**3.15E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
I-131	042-5	<		**8.90E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-6-3FT
Station:
Description:
LIMS Number: L19307-3 (80699)
% Moisture: 9.17

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
BA-133	042-5	<		**2.56E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-134	042-5	<		**1.88E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-136	042-5	<		**4.77E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-137	042-5	**1.12E-001**	2.05E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CE-139	042-5	<		**3.16E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
BA-140	042-5	<		**1.71E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
LA-140	042-5	<		**4.76E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CE-141	042-5	<		**1.07E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
CE-144	042-5	<		**2.09E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-152	042-5	<		**5.92E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-154	042-5	<		**5.91E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
HG-203	042-5	<		**2.68E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RA-226	042-5	**6.66E-001**	3.56E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
AC-228	042-5	**6.17E-001**	8.67E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-228	042-5	**5.64E-001**	7.78E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-232	042-5	**5.59E-001**	3.78E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-235	042-5	**6.49E+000**	1.71E-001		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-238	042-5	**2.28E+001**	3.43E+000		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
NP-239	042-5	<		**2.67E+001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-5-3FT
Station:
Description:
LIMS Number: L19307-4 (80700)
% Moisture: 8.51

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
BE-7	042-5	<		**1.50E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
K-40	042-5	**1.15E+001**	3.79E-001		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CR-51	042-5	<		**1.72E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MN-54	042-5	<		**1.60E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CO-57	042-5	**4.20E-002**	1.38E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CO-58	042-5	<		**1.67E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
FE-59	042-5	<		**3.85E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CO-60	042-5	<		**1.52E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
ZN-65	042-5	<		**3.50E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SE-75	042-5	<		**2.03E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SR-85	042-5	<		**2.05E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
Y-88	042-5	<		**1.50E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-94	042-5	<		**1.38E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-95	042-5	<		**2.01E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
ZR-95	042-5	<		**3.17E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MO-99	042-5	<		**1.63E+000**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-103	042-5	<		**1.88E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-106	042-5	<		**1.30E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CD-109	042-5	<		**5.59E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
AG-110M	042-5	<		**1.42E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SN-113	042-5	<		**1.97E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-124	042-5	<		**1.56E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-125	042-5	<		**3.93E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

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Report of Analysis

10/14/02 7:31:27AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-5-3FT
Station:
Description:
LIMS Number: L19307-4 (80700)
% Moisture: 8.51

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
TE-129M	042-5	<		**2.22E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
I-131	042-5	<		**6.46E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
BA-133	042-5	<		**1.83E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-134	042-5	<		**1.34E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-136	042-5	<		**3.31E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-137	042-5	**6.80E-002**	1.47E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CE-139	042-5	<		**1.88E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
BA-140	042-5	<		**1.28E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
LA-140	042-5	<		**4.20E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
CE-141	042-5	<		**6.15E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
CE-144	042-5	<		**1.35E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-152	042-5	<		**4.20E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-154	042-5	<		**3.61E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
HG-203	042-5	<		**1.96E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RA-226	042-5	**5.83E-001**	2.74E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
AC-228	042-5	**1.03E+000**	1.51E-001		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-228	042-5	**6.03E-001**	5.85E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-232	042-5	**5.67E-001**	2.87E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-235	042-5	**3.19E+000**	1.03E-001		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-238	042-5	**4.34E+000**	1.93E+000		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
NP-239	042-5	<		**1.63E+001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

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BROWN ENGINEERING, INC.
A Teledyne Technologies Company
2508 Quality Lane
Knoxville, TN 37931-3133

US Ecology
109 Flint Road
Oak Ridge TN 37830
Attn: Darrel Ray

Report of Analysis/Certificate of Conformance

11/6/02

LIMS #:	L19473
Project ID#:	US607-3EREGFS-02
Received:	10/22/02
Delivery Date:	11/6/02
P.O. # :	1099
Release #:	FS-MO-02-06
SDG #:	N/A

This is to certify that Teledyne Brown Engineering - Environmental Services located at 2508 Quality Lane, Knoxville, Tennessee, 37931, has analyzed, tested and documented samples as specified in the applicable purchase order.

This also certifies that requirements of applicable codes, standards and specifications have been fully met and that any quality assurance documentation which verified conformance to the purchase order is on file and may be examined upon request.

I hereby certify that the above statements are true and correct.

Keith Jeter
Operations Manager

Cross Reference Table

Client ID	Laboratory ID	TI#
BKG-1	L19473-1	81808

Report of Analysis

11/6/02 11:03:57AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Darrel Ray

Sample ID: **BKG-1**
Station:
Description:
LIMS Number: L19473-1 (81808)
% Moisture:

L19473
US Ecology
US607-3EREGFS-02

Collect Start:
Collect Stop:
Received: 10/22/02
Matrix: Soil (S)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-233/234 (AS)	062-110	**5.92E-001**	2.17E-001		pCi/g	0.600	g		11/05/02	60.001	seconds	+		
U-235 (AS)	062-110	<		**2.95E-002**	pCi/g	0.600	g		11/05/02	60.001	seconds			
U-238 (AS)	062-110	**7.70E-001**	2.51E-001		pCi/g	0.600	g		11/05/02	60.001	seconds	+		

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Analysis Request Chain of Custody

K-00B

Client name: US Ecology / Field Services
Client address: 109 Flint Rd. Oak Ridge TN 37830
Phone Number: 865-220-5238
Fax Number: 865-220-5365
Contact: Rob Miller

E - Environmental:
P - 10CFR61, 10CFR50, Other high level:
Turn-around-time: 15 days days
Purchase order: FS-MO-02-016

LIMS #:
Variance Report:
(for lab use)

Project Number:

T.I. Number (for lab use)	Client Sample ID	Description	Station	Collection Date/Time Start	Collection Date/Time Stop	Volume	Units	Matrix or type	Analysis Request
~~81708~~ 2MJ	BKG-1-81808	Soil		—	—	—	—		Isotopic Uranium

Special Instructions:

Relinquished by:	Date:	Relinquished by:	Date:	Relinquished by:	Date:
Received by: Merritt Yoder	Date: 10/22/02	Received by:	Date:	Received by:	Date:

Report of Analysis

10/14/02 7:31:10AM

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Darrel Ray

Sample ID: HEM-8-3FT
Station:
Description:
LIMS Number: L19307-1 (80697)
% Moisture:

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-233/234 (AS)	062-110	**1.60E+001**	1.23E+000		pCi/g	0.500	g		10/10/02	60,002	seconds	+		
U-235 (AS)	062-110	**4.18E-001**	1.06E-001		pCi/g	0.500	g		10/10/02	60,002	seconds	+		
U-238 (AS)	062-110	**1.29E+000**	1.84E-001		pCi/g	0.500	g		10/10/02	60,002	seconds	+		

Comments:

Sample ID: HEM-4-3FT
Station:
Description:
LIMS Number: L19307-2 (80698)
% Moisture:

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
U-233/234 (AS)	062-110	**1.42E+001**	1.16E+000		pCi/g	0.500	g		10/10/02	60,003	seconds	+		
U-235 (AS)	062-110	**4.37E-001**	1.14E-001		pCi/g	0.500	g		10/10/02	60,003	seconds	+		
U-238 (AS)	062-110	**2.28E+000**	2.78E-001		pCi/g	0.500	g		10/10/02	60,003	seconds	+		

Comments:

Sample ID: HEM-6-3FT
Station:
Description:
LIMS Number: L19307-3 (80699)
% Moisture: 9.17

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
BE-7	042-5	<		**2.07E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
K-40	042-5	**1.04E+001**	4.90E-001		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

**** Results are reported on an as received basis unless otherwise noted

TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-6-3FT
Station:
Description:
LIMS Number: L19307-3 (80699)
% Moisture: 9.17

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
CR-51	042-5	<		**2.54E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MN-54	042-5	<		**2.19E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CO-57	042-5	**9.92E-002**	2.51E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CO-58	042-5	<		**2.26E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
FE-59	042-5	<		**5.45E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CO-60	042-5	<		**1.74E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
ZN-65	042-5	<		**4.78E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SE-75	042-5	<		**2.80E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SR-85	042-5	<		**2.86E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
Y-88	042-5	<		**2.00E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-94	042-5	<		**1.94E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-95	042-5	<		**3.62E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
ZR-95	042-5	<		**4.22E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MO-99	042-5	<		**2.58E+000**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-103	042-5	<		**2.52E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-106	042-5	<		**1.83E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CD-109	042-5	<		**9.30E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
AG-110M	042-5	<		**2.08E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SN-113	042-5	<		**2.81E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-124	042-5	<		**2.35E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-125	042-5	<		**5.57E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
TE-129M	042-5	<		**3.15E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
I-131	042-5	<		**8.90E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

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TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-6-3FT
Station:
Description:
LIMS Number: L19307-3 (80699)
% Moisture: 9.17

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
BA-133	042-5	<		**2.56E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-134	042-5	<		**1.88E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-136	042-5	<		**4.77E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-137	042-5	**1.12E-001**	2.05E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CE-139	042-5	<		**3.16E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
BA-140	042-5	<		**1.71E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
LA-140	042-5	<		**4.76E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CE-141	042-5	<		**1.07E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
CE-144	042-5	<		**2.09E-001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-152	042-5	<		**5.92E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-154	042-5	<		**5.91E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
HG-203	042-5	<		**2.68E-002**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RA-226	042-5	**6.66E-001**	3.56E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
AC-228	042-5	**6.17E-001**	8.67E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-228	042-5	**5.64E-001**	7.78E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-232	042-5	**5.59E-001**	3.78E-002		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-235	042-5	**6.49E+000**	1.71E-001		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-238	042-5	**2.28E+001**	3.43E+000		pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
NP-239	042-5	<		**2.67E+001**	pCi/G	310.300	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No

Comments:

Flag Values
+ = Activity concentration exceeds MDC and 3 sigma and peak identified(gamma only)
* = Peak not identified, but forced activity concentration exceeds MDC and 3 sigma
High = Activity concentration exceeds customer reporting value
Spec = MDC exceeds customer technical specification
No = Peak not identified in gamma spectrum
Yes = Peak identified in gamma spectrum
Bolded text indicates reportable value.

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BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-5-3FT
Station:
Description:
LIMS Number: L19307-4 (80700)
% Moisture: 8.51

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
BE-7	042-5	<		**1.50E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
K-40	042-5	**1.15E+001**	3.79E-001		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CR-51	042-5	<		**1.72E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MN-54	042-5	<		**1.60E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CO-57	042-5	**4.20E-002**	1.38E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CO-58	042-5	<		**1.67E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
FE-59	042-5	<		**3.85E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CO-60	042-5	<		**1.52E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
ZN-65	042-5	<		**3.50E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SE-75	042-5	<		**2.03E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SR-85	042-5	<		**2.05E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
Y-88	042-5	<		**1.58E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-94	042-5	<		**1.38E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
NB-95	042-5	<		**2.01E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
ZR-95	042-5	<		**3.17E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
MO-99	042-5	<		**1.63E+000**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-103	042-5	<		**1.88E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RU-106	042-5	<		**1.30E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CD-109	042-5	<		**5.59E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
AG-110M	042-5	<		**1.42E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SN-113	042-5	<		**1.97E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-124	042-5	<		**1.56E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
SB-125	042-5	<		**3.93E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No

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TELEDYNE BROWN ENGINEERING
A Teledyne Technologies Company

Sample ID: HEM-5-3FT
Station:
Description:
LIMS Number: L19307-4 (80700)
% Moisture: 8.51

L19307
US Ecology
US607-3EREGFS-02

Collect Start: 09/22/02 0:00
Collect Stop:
Received: 10/04/02
Matrix: Solids (SD)
Volume:

Radionuclide	SOP #	Activity Conc	Uncertainty (2 Sigma)	MDC	Units	Aliquot Volume	Aliquot Units	Reference Date	Count Date	Count Time	Count Time Units	Flag Values		
TE-129M	042-5	<		**2.22E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
I-131	042-5	<		**6.46E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
BA-133	042-5	<		**1.83E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-134	042-5	<		**1.34E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-136	042-5	<		**3.31E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
CS-137	042-5	**6.80E-002**	1.47E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
CE-139	042-5	<		**1.88E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
BA-140	042-5	<		**1.28E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
LA-140	042-5	<		**4.20E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
CE-141	042-5	<		**6.15E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No
CE-144	042-5	<		**1.35E-001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-152	042-5	<		**4.20E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
EU-154	042-5	<		**3.61E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
HG-203	042-5	<		**1.96E-002**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds			No
RA-226	042-5	**5.83E-001**	2.74E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
AC-228	042-5	**1.03E+000**	1.51E-001		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-228	042-5	**6.03E-001**	5.85E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
TH-232	042-5	**5.67E-001**	2.87E-002		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-235	042-5	**3.19E+000**	1.03E-001		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
U-238	042-5	**4.34E+000**	1.93E+000		pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	+		Yes
NP-239	042-5	<		**1.63E+001**	pCi/G	303.100	G	09/22/02 12:00	10/10/02	60,000	Seconds	*		No

Comments:

Flag Values
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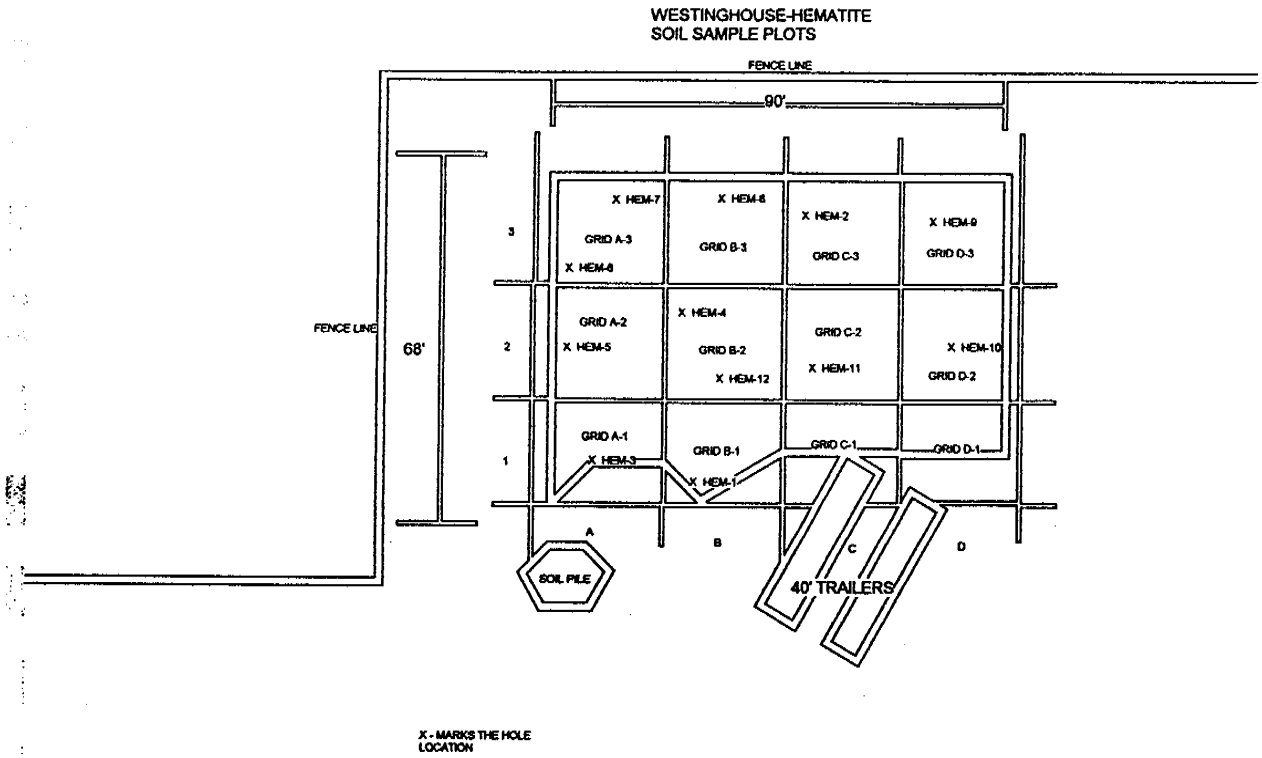
Appendix C
Contractor Soil Sample Location Map


WESTINGHOUSE-HEMATITE
SOIL SAMPLE PLOTS
FENCE LINE
90'
FENCE LINE
68'
X HEM-7
GRID A-3
X HEM-8
X HEM-6
GRID B-3
X HEM-2
GRID C-3
X HEM-9
GRID D-3
GRID A-2
X HEM-5
X HEM-4
GRID B-2
X HEM-12
GRID C-2
X HEM-11
X HEM-10
GRID D-2
GRID A-1
X HEM-3
GRID B-1
X HEM-1
GRID C-1
GRID D-1
3
2
1
A
B
C
D
SOIL PILE
40' TRAILERS
X - MARKS THE HOLE LOCATION